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General Articles

THE DISEASES OF CAGE AND AVIARY BIRDS, WITH SOME REFERENCE TO THOSE OF FURRED AND FEATHERED GAME*

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(*Continued from page* 352.)

Other Diseases

PARASITIC BRONCHITIS OR "GAPES"

This worm infestation of the trachea and bronchial tubes and sometimes the air sacs occurs in most of the avian species, especially in those that consume worms. It is rare in the seed-eating birds or finches. Birds in a state of nature are rarely incommoded by their presence, but those in a state of domestication or semi-domestication or confined to aviaries, especially when too artificially fed, are, when young and immature, often destroyed in large numbers by this malady. I have seen it in the King Bird of Paradise, in young nestling ornamental thrushes before they had time to leave the nest, and in other species. This condition is one of the banes of chicken and pheasant rearing. The parasites are often found in adult turkeys, pheasants and partridges late in the autumn without the hosts, when alive, showing any evidence of their presence. In land birds this red, forked parasite is *Syngamus trachea* and in the water birds *Cythostoma* (*Syngamus*) *bronchialis*.

When the mature worms are expelled by expectoration they break up and set the eggs free. The embryos, hatching out in moist and warm surroundings, crawl up the moist herbage or are consumed by earthworms and other invertebrates. These in their turn are ingested by birds and after migrating through the system and undergoing developmental changes, take up their final residence in the larger bronchial tubes and the trachea, where the sexes copulate and form together a forked body. There is no doubt that young birds in the nest get infested by their parents feeding them on worms containing the gapeworm embryos. If the presence of these parasites is suspected by the gasping, wheezing breathing or attempts at expectoration, a cotton-wire pipe cleaner with its sharp point turned round on the stem should be dipped in a mixture of ether 1 part, oil of turpentine or eucalyptus 1 part and olive oil to 10 parts and passed down the wind-pipe and twisted round two or three times before it is withdrawn. This usually has the desired effect. Spraying the infested ground with a solution of salt, or sulphate of copper or iron destroys the embryos in the herbage or in water.

AIR-SAC DISEASE

In most birds there are nine and in a few ten air-sacs which communicate on the one hand with the bronchial tubes and on the other with the cavities of the larger bones, especially in the larger or heavier species of bird. Their internal lining is mucous membrane which is continuous with that of the larger bronchial tubes. During flight they become filled with rarefied air, making the body more buoyant. These sacs often become the seat of disease such as aspergillosis, streptococcosis, etc., frequently containing, in the case of aspergillosis in canaries and other confined birds, a yellowish or greenish cheesy or felted material. In the larger birds, especially the Gallinaceæ, they are sometimes invaded by parasitic mites and gapeworms. In the water birds the abdominal air-sacs are at times filled with a dirty, stinking, liquid material. In such cases, if diagnosed early, the sacs may be opened by making an incision through that part of the abdominal wall covering them and allowing them to drain; the cavities should then be washed out with a weak antiseptic solution. Closure of the opening should be prevented by plugging with a piece of gauze. Daily irrigation should be continued until the sacs remain clean and free from infection. (For Rupture of the Air-Sacs and Aspergillosis of the Air-Sacs, *vide* articles dealing with them.)

PAROXYSMAL ASTHMA IN PARROTS

This resembles the spasmodic asthma encountered in man and in the dog and cat. The asthma comes on in paroxysms and between the attacks, the intervals between which may vary in length—in some instances being of several months' duration—the parrot may pre-

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sent all the appearances of normal or good health. During the attack the bird seems very much distressed, gasping for breath and emitting during each inspiratory and expiratory effort harsh wheezing sounds and manifesting an anxious expression, with open mouth and ruffled or open feathers of the head, neck and body. Sometimes these attacks last from 30 minutes to an hour or even longer. When they have passed away the bird seems itself again. (Quite 90 per cent. of the larger parrots imported, such as the Amazon and African Grey, are of the female sex, as verified by *post-mortem* examination.) This complaint should not be confounded with chronic bronchitis, in which there may be some wheeziness, nor with the so-called asthma of canaries and other birds affected with aspergillosis, for which see p. 347.

If the attacks are prolonged, a drop of 1 : 10,000 solution of adrenalin should be given in a teaspoonful of water. This may be followed by a teaspoonful of a mixture composed of 1 drachm of tincture of lobelia in 1 oz. of simple syrup, twice daily. Iodide of potassium and bromide of potassium, of each 2½ grains, should be added to every 2 oz. of the drinking water daily or every other day. The food should be as natural as possible.

Pericarditis

Pericarditis is often encountered *per se* or accompanying infectious diseases, or in gout, and more in the parrot tribe than in other species. In uncomplicated pericarditis in the larger parrots there is usually great distension of the pericardial sac due to the accumulation of clear, jelly-like sero-fibrinous exudate. This same kind of exudate is found enclosing the liver, which has undergone acute hepatisation. The disease kills within three or four days after the bird has gone off its food and has become mopy and dull. The abdominal viscera have a slight congested appearance and the lungs show anthracosis. The carcase is generally plump and heavy and the plumage may be excellent. The victim, more often of the African grey species, may be 20 or more years old.

In gouty pericarditis the pericardium is often cemented to the epicardium by a more or less greenish-yellow clay-like deposit of urates. When the sac is not adherent to the epicardium it is frequently seen to be lightly covered with a similar deposit or exudate; at other times there may be a thick clay-like deposit.

It may happen that small birds when excited or frightened—as in being caught or at the commencement of the breeding season when sexual excitement and song are intense—die suddenly either from heart failure, or from hæmorrhage resulting from rupture of one of the auricles or large blood vessels. Not rarely old parrots die suddenly of angina pectoris.

Tuberculosis sometimes invades the heart in the larger birds. In streptothricosis and aspergillosis deposits on the epicardium or on the inside or outside of the pericardium may be encountered.

Hæmorrhages

Canaries and other birds sometimes die suddenly from hæmorrhages due to rupture of a blood vessel. One of the commonest situations in which this occurs is under the skin covering one side of the large pectoral muscle, due to spontaneous bursting of the pectoral vein. Another common situation is under the skin covering the abdomen. Hæmorrhage also occurs in the liver when this organ is enlarged and softened, the tissues breaking down and producing rupture of one or more vessels in its substance. The enlarged liver may also be the seat of tuberculous lesions. One of the auricles of the heart may burst during the catching of the bird or whilst it is held in one's hand; also during the period of sexual excitement of the male bird. An enlarged spleen or kidney may sometimes break down and cause death by hæmorrhage.

Occasionally severe hæmorrhage is witnessed behind or around one eye-ball, or usually both, the eye-balls protruding from their cavities. It often arises in the alimentary canal as the effect of a peracute form of septicæmic enteritis or at the commencement of a rapid, short course of some infectious disease. Not infrequently the gut is distended with a long, thick cylinder of clotted blood.

Treatment is generally of no avail, because death usually takes place almost before one is aware that anything is amiss with the victim. The condition, therefore, is customarily discovered on *post-mortem* examination.

Cerebral apoplexy is unknown in birds—at least that is my experience after making many thousand *post-mortem* examinations of various species of bird. What those inexperienced in pathology mistake for cerebral apoplexy is the presence of one or more hæmorrhagic spots between the plates of bone forming the surface of the cranium following some very acute infection such as paratyphoid. The hæmorrhages are outside the cranial cavity and mostly take place during or soon after death.

Liver Diseases

Various diseases of the liver are frequently met with in cage and aviary birds, especially when they are affected with contagious maladies such as infectious necrosis, paratyphoid, streptococcal fever, tuberculosis, histomoniasis. In most cases the organ is very much enlarged, soft and usually extends far behind the sternum. In other cases there may be extensive fatty degeneration or deposits of

fat in the liver, more particularly in birds over-fed on food that has a tendency to fatten, or on colour-food. Very often such livers rupture or break down and the bird dies from hæmorrhage. At other times small hæmorrhages are scattered through the liver substance.

Hepatitis or *cirrhosis* is frequent in old parrots. Either is usually accompanied by a serous or sero-fibrinous exudation into the thoracic and peritoneal cavities. Cirrhosis is often encountered in budgerigars, in which the liver becomes leathery, difficult to cut, not infrequently taking on a yellowish tint and becoming enlarged.

Jaundice as a symptom of septicæmia or of some blood infection is very common in the smaller foreign ornamental finches; it is often associated with pneumonia.

Amyloid degeneration, in which the liver has the appearance of streaky bacon or of a belly of pork or the soft roe of a fish, or is quite white, is occasionally encountered on *post-mortem* examination of aged parrots or cockatoos. It is often associated with fatty deposits or tumours under the abdomen or breast. In infectious necrosis, paratyphoid, streptococcal fever, tuberculosis and histomoniasis, besides the liver the spleen is generally much enlarged and in infectious necrosis, tuberculosis and histomoniasis the lesions are characteristic of the respective diseases.

The treatment for enlargement of the liver due to over-feeding is by suppression of those foods that have too stimulating an effect on the organ, and the administration of sulphate of sodium or magnesium in the drinking water. Brussels sprout or green cabbage leaves, grated raw carrot or pulped turnip, fresh fruit, ant cocoons, insects, etc., should be allowed to those birds for which they are specially suited. Hunjadi Janos or other mineral waters may be given occasionally in the usual drinking water. Under-feeding rather than over-feeding should be adopted, especially for those birds that do not get any exercise.

As to those diseases due to infection, nothing can be done but to take measures for their prevention.

Diseases of the Spleen

In finches, such as the canary, the spleen is elongated or cylindrical in outline, and in parrots and the Gallinaceæ it is shaped more like the doubled fist, with rounded edges.

Not infrequently the abdomen, especially in canaries, becomes very much distended, often showing under the stretched abdominal walls a large purple or yellowish body which is an enlarged spleen, that frequently attains the size and shape of a ground or monkey nut. In some instances the enlargement is of a sarcomatous or cancerous nature. It may be mistaken for cancer of the kidney, ovary or testicle or of some other internal organ. The victim may be lively, but there is generally a difficulty in breathing due to pressure of the enlarged organ or growth on the blood vessels, lungs and heart.

In non-malignant cases painting of the abdominal walls with tincture of iodine, the giving of iodide of potassium in the drinking water and feeding on non-stimulating and non-fattening foods give relief in some instances. If the case is of a malignant nature no treatment will be of any avail.

The enlargement of the spleen and liver which so frequently occurs in infectious diseases such as infectious necrosis, paratyphoid, septicæmia, streptococcal fever and tuberculosis is usually only observed on *post-mortem* examination.

Nephritis

Kidney disease is frequent in birds. It occurs in the form of acute nephritis, subacute parenchymatous nephritis, or chronic nephritis. Sometimes the urinary canals become blocked with urates. In the acute form the lobes are swollen, dull yellowish in colour, and stand well above the spaces under the sacrum. In the chronic form they are pale and somewhat shrunken. There is no doubt that kidney trouble in birds is mainly due to infection, or to dietetic errors.

Cutaneous Emphysema

The areolar tissue under the skin, especially on the head, neck and breast, sometimes becomes infiltrated with air which distends the skin to such a degree as to give the bird, especially its head and neck, a gigantic appearance. When the swelling is manipulated it gives a soft air-cushion and crackling sensation to the touch. The condition generally appears suddenly and does not often cause distress to the creature. Although seen in ornamental pheasants, it is mostly encountered in parrots. It is probably due to external puncture of the air-sacs or lungs by some pointed instrument or foreign body. In poultry it generally follows puncture of the lung during the operation of caponisation.

When the distended parts are punctured and they are subjected to pressure, the imprisoned air escapes. The condition is likely to recur, therefore treatment must be repeated until there is no repetition of the distension.

In canaries, and especially the young, emphysema is sometimes observed at the root of the neck and in front of the breast. In young birds it is probably a congenital affection of the air-sacs. Cutting out a triangular piece of skin covering the distended part gives exit to the imprisoned air, but as soon as the wound

has healed up there is a tendency for the distension to reappear.

Crop-Binding

This condition, which is somewhat rare in the smaller birds, is generally due to loss of muscular power in the crop wall whereby the ingested food accumulates and cannot pass on to the proventriculus and gizzard, which may also be crammed with ingesta. This indicates that the cause in some instances lies with these organs, which, when crammed themselves, have a throwing-back influence on the crop. Indigestible material, as fibre, hairs, grass, hay, etc., matted or felted together and forming a ball or lump, has a similar effect. It should not be mistaken for the large serous cyst which occasionally appears in the vicinity of the crop, mostly in budgerigars; nor for crop-sickness.

Manipulation of the crop between thumb and forefinger from time to time may bring about evacuation of its contents through the mouth. Warm water containing bicarbonate of soda should be given at intervals to soften the material and to render its expulsion easier. Some birds, like budgerigars and the large parrots, often regurgitate and even vomit their food and thus rid the crop of it. When there is a large foreign body such as matted hay, hair, fibre or coarse grass, a pair of long narrow forceps may, in the case of the larger birds, be passed down the gullet into the crop and the indigestible body seized and withdrawn. If it is too large to be removed in this manner the feathers covering the skin in the region of the crop may be plucked so as to leave it bare for an incision to be made through the walls of the crop for the purpose of clearing it of its contents. After this has been done the wound should be disinfected and the skin and walls of the crop brought together by a series of interrupted sutures and the wound then painted with tincture of iodine.

Crop-Sickness

Catarrh of the crop, which is sometimes seen in some of the larger birds, especially those of the pigeon family, is evidenced by expulsion of fluid when the distended soft crop is compressed between the thumb and forefinger. Tablets or pills composed of dimol or 1 part of B-naphthol, 2 parts of bismuth carbonate, 1 part of bicarbonate of soda and 1 part of powdered charcoal should be given morning, noon and night and the birds fed on milk sop or soaked peas or seeds. Grit should not be allowed until the trouble has ceased.

Indigestion

(a) *Due to a Superabundance of Sharp Grit or Sand in the Intestine.*—Small birds given sharp grit or sand intermittently, frequently ingest too large an amount, so that it passes too rapidly through the gizzard into the intestine, where it accumulates and sets up irritation and indigestion and not rarely enteritis, which is often followed by death. While not rare in very young chickens and pheasants, this condition is encountered mostly in canaries and other small cage birds—to which, however, it is not necessary to give such materials, in consequence of their husking or decorticating their seeds: neither is it necessary in the case of the insectivorous, fruit-eating or carnivorous species of birds.

(b) *Due to Excess Accumulation of Dry, Hard Seeds in the Crop, Proventriculus and Gizzard.*—This often occurs in the smaller species, which ravenously ingest a large quantity of dry, hard seeds such as white millet or canary seed after they have husked it. It is usual for the condition to be observed only on *post-mortem* examination. To prevent its occurrence the birds should not be supplied with too much seed in a given time: it is safer to give it in small quantities two or three times a day. If suspected, two or more drops of castor oil should be dropped into the mouth.

In the larger birds coarse grass, hay, fibre or hair may accumulate in the crop, proventriculus, gizzard and even the intestine and set up indigestion and obstruction, which is generally followed by death.

Impaction of the Gizzard.—This is occasionally encountered in cage birds such as robins, nightingales and other insectivorous birds. It is generally due to the swallowing of fine hairs along with the food, the victims being unable to vomit the pellet formed by the hairs becoming matted or interwoven. The pellet is in the form of an oval or rounded ball similar to the hair-balls found occasionally in calves or adult cattle. Indigestion is set up and the bird usually dies in a state of convulsions, due to auto-intoxication resulting from prolonged retention of the mass. In one case in an Indian nightingale which died suddenly, the owner used to throw small pieces of raw meat on the carpet for the bird to pick up. On *post-mortem* examination the felted mass of hair picked up with the meat from the carpet was found retained in the gizzard in the form of a small oval ball. Insectivorous birds, like the carnivorous birds such as eagles, owls and hawks do the hair, skin, bone or feathers, always reject the chitinous material of insects after they have digested the digestible tissues. To pigeons and the larger insectivorous or granivorous birds, pills composed of bismuth subnitrate, catechu and extract of belladonna may be administered two or three times a day. In peracute cases in which there is hæmorrhage a drop of 1:1,000 solution of adrenalin hydrochloride in a little water may be tried.

Enteritis

This is very frequent in every confined species of bird, but not so much so as in the budgerigar, ten or more of which it is not uncommon in an aviary to find dead from this condition in a morning, while often it kills one or two a week or a month. Undoubtedly it is due to infection, but some seem to think it arises from the ingestion of some poison, as zinc or creosote (the green creosote oil of commerce), or from the consumption of some poisonous shrub. It may arise following a change of surroundings or from exciting the birds too much when attempting to catch them, or after the introduction of a newly-acquired bird or of one returning from a show. In old isolated parrots the peracute form often appears after exposure to a draught during intemperate weather. It is occasionally accompanied by vomiting as well as diarrhœa or dysentery.

In all birds the condition may arise during paratyphoid infection or other salmonelloses, while it is not infrequently associated with pneumonia. In the larger parrots the enteritis may be so intense that the intestine becomes swollen and filled with blood, killing the victim in a few hours; in subacute cases blood is passed with mucus or fæces.

Treatment in subacute cases consists of the substitution of water by milk containing subnitrate of bismuth or kaolin. Brand's essence of beef or Oxo beef jelly should be given every three or four hours to maintain the strength of the bird. In addition, there should be administered to the smaller birds one or two drops of syrup of dimol two or three times a day.

Diarrhœa

This is not of itself a disease but a symptom of irritation due to sudden change of food or improper food. Frequently it is associated with coccidia, parasitic worms, infectious necrosis, paratyphoid or other salmonelloses, psittacosis, gastro-enteritic catarrh, aperients or laxatives or poisons. It is often observed in constipation and in cases where tumours, such as adenocarcinomata, compress the lumen of the bowel and not rarely in the larger birds is associated with the presence of foreign bodies in the bowel.

In the case of impaction of the rectum or cloaca, warm soapy enemata should be carefully administered to break up the hardened mass or concretion and castor oil or liquid paraffin given by the mouth. In large birds other than those of the parrot tribe a pill containing from ¼ to 1 grain of calomel should be administered. Where the diarrhœa is brought about by local infection of the intestinal mucous membrane, bismuth subnitrate, prepared chalk or kaolin should be given, either sprinkled on sweetened milk sop or administered by the mouth in the form of a soft paste. In the event of coccidiosis being the cause of the trouble, catechu or kino, or sulphate or citrate of iron may be given by the mouth or in the drinking water. Undiluted lime water given as drinking water often yields good results. Any bird showing chalky or liquid diarrhœa should be isolated and the cage or aviary in which it has been housed should be scrupulously cleansed and disinfected so that, in case of infection, the trouble may be checked or its spread to other birds prevented.

Diarrhœa of Nestlings.—Diarrhœa is often observed in young canaries and sometimes in other small species before they leave the nest when in cages. It may also be encountered in their parents at the same time. It is probably due to the nature of the food, *i.e.*, it may have undergone bacterial or fungal changes or it may not contain a sufficient quantity and variety of vitamins, whereby it sets up irritation of the bowel and favours auto-infection, especially of the salmonella type.

The nest is soiled with liquid fæces which have a scalding effect on the tender skin of the hinder parts, more particularly in the vicinity of the vent region and other parts smeared with them.

This condition is responsible for a great number of deaths within 24 to 36 hours. After the nest pan has been thoroughly cleansed, disinfected and dried, there should be sprinkled on the inflamed skin of the small victims kaolin, starch or talc two or three times a day. The food of the parents should be changed and freshly prepared from the best quality materials. Seeds such as rape and canary should be soaked in tap water for three or four hours before being given. A little powdered chalk and a few grains of fine sand should be sprinkled on the soft food, such as brown bread or biscuit soaked in full-cream condensed milk. Instead of ordinary water undiluted lime water should be allowed. The bottom of the cage should be strewn with fresh pine sawdust, and the nest pan should be dusted with talc, kaolin or starch, so as to soak up the moisture from the more or less liquid fæces.

Dysentery.—This is a term usually applied when blood is passed with the fæcal material. It often accompanies tuberculosis of the bowel, coccidiosis, psittacosis, severe enteritis or gastritis. In non-infectious cases, especially in parrots, it is sometimes due to a chill. There is usually some straining after passing of the stools in consequence of the rectum, cloaca or vent being the seat of the inflammation or soreness. In the parrot tribe, vomiting of food and fluid or mucus from the crop or proventriculus may occur, often accompanied by very great depression and weakness, ruffled feathers, hiding of the head in the

shoulder feathers, loss of condition and of appetite but great desire for water.

There is no doubt that exposure to draughts during inclement weather accounts for most of the cases in parrots and that, in the smaller birds, coccidiosis largely is responsible.

The victims should be kept in a high temperature (100°F. or more) and be given bismuth subnitrate, kaolin, prepared chalk or tincture of catechu or kino in a little condensed milk or in milk sop. If there should be no appetite, Brand's essence of beef or Oxo beef jelly should, when melted, be given in small quantities and frequently to keep up the strength; otherwise, if the trouble continues for any length of time, emaciation becomes extreme and death takes place from exhaustion.

Constipation

This is often brought about by hard, undigested seed or grain, an excessive quantity of grit, astringent or fibrous material,, or by want of tone in the muscular walls of the rectum before it opens into the cloaca. Sometimes the rectum has undergone a chronic form of inflammation. Tumours pressing on the bowel, egg-binding and other troubles impeding the progress of the fæces occasionally account for it. It should not be confused with cloacitis or inflammation of the vent chamber, which becomes swollen, hot and sore.

The vent chamber itself may become filled with dry, hard fæces which are too bulky to pass through the vent or anus. There may be repeated straining as if the bird desired to relieve itself. The region of the vent and vent chamber is bulging or distended.

Repeated careful injections of warm soapy water, glycerine, olive oil or liquid paraffin may be given and afterwards the region of the vent chamber should be gently manipulated with thumb and forefinger in order to break up the hard mass. These measures should be repeated until relief is obtained. A drop or more of castor oil or liquid paraffin should be given by the beak, the dose being according to the size of the bird. Water containing sulphate of sodium or magnesium instead of plain water should be allowed, that it may act as a laxative, and green food, as green cabbage or Brussels sprout leaves, should be given.

Should the vent chamber itself be filled with dry, hard excrement after injections of soapy water and oil or paraffin have been administered, the fæces should be scooped out with a small spud or the loop end of a small hairpin.

Cloacitis or Vent Catarrh

The vent chamber or cloaca may become the seat of catarrh which is often accompanied by soreness of the chamber and anus and frequently produces straining as if the bird is trying to evacuate some retained fæces. The skin and mucous membrane surrounding the anal opening or vent are swollen, red and not infrequently have an abraded appearance with caking of the feathers in this region. In polygamous species such as the Gallinaceæ this is of contagious origin. It should not be mistaken for retention of fæces in the vent chamber nor for dysentery or catarrh of the rectum. It is very common in the smaller cage birds and in the parrot family.

A soothing antiseptic application such as zinc oxide ointment should be used and applied frequently. Hazeline cream should be gently pushed into the chamber and maintained there by holding the tip of the forefinger over the vent opening until the material is dissolved. This should be repeated every four hours until relief has been obtained. If the desired effect is not secured in 24 hours gall and opium ointment may be substituted for the hazeline cream.

Prolapse of the Rectum

This resembles in appearance prolapse of the oviduct. The part should be smeared with zinc oxide or gall and opium ointment containing a few drops of solution of adrenalin hydrochloride and a small quantity of cocaine hydrochloride, and the prolapsed organ pushed back into its normal position. If the falling down should recur, the treatment should be repeated and a drop or two of castor oil or liquid paraffin given by the mouth.

Parasitic Intestinal Worms

Rarely encountered in birds bred in cages, they are sometimes observed in large collections confined in an aviary. In caged-up wild birds many different species of worms are found from time to time, especially during the warmer months of the year.

The tapeworm *Davainea leptosoma* (Diesing, 1850) and other species are sometimes observed in the parrot family. Similar tapeworms are found in sparrows, starlings, blackbirds and thrushes.

Habronema incerta and other species of Spiroptera occasionally invade the mucous membrane of the proventriculus and gizzard of parrots, toucans and other avian species, in which they set up a chronic inflammation of these organs and cause death by wasting and exhaustion. They may also invade the air-sacs and peritoneal cavity and cause death by peritonitis. As a rule these infestations are enzoötic, that is, they attack a large number of birds at about the same time in the same aviary. They are difficult to overcome, but affected birds should be isolated and the aviary thoroughly cleansed and disinfected. Infestation with capillaria of undetermined species may occur as an enzoötic in an aviary containing a small pond or stream, while it is not an infrequent

cause of death among canaries and other small and even large aviary-kept birds. The parasites are usually present in large numbers and set up swelling of the bowel wall and distension of its lumen. Ornamental pheasants, partridges, quail and other gallinaceous species are sometimes infested with *Trichostrongylus pergracilis* var. *tenuis*. They may cause death by convulsions and toxæmia or from emaciation and marasmus. Ascarids are frequent in birds of the pigeon tribe and when in great numbers cause obstruction of the proventriculus, gizzard and duodenum, often accompanied by peracute enteritis and hæmorrhage into the lumen of the intestine. Many intestinal worms are so small that they can only be detected by microscopical examination of the intestinal contents or of the fæces.

For the expulsion of the intestinal roundworms, santonin, carbon tetrachloride, oil of chenopodium or oil of turpentine mixed with oil or other material, and for that of tapeworm areca nut, oil of male fern, kousso, kamala or pumpkin seeds, are efficacious.

Prolapse of the Oviduct

This occurs sometimes in breeding hens, especially canaries, pigeons and parrots, and is due to loss of muscular tone in the walls of the oviduct. When the oviduct appears outside the anus or vent it somewhat resembles a prolapsed rectum. The treatment is similar to that for prolapse of the rectum.

Egg-Binding or Cramp of the Oviduct

This is a very common complaint in canaries, budgerigars and other birds, especially foreign birds confined in cages or in aviaries, and generally prevails during wet, chilly weather when the wind is in the north. It may occur in several birds at the same time in the same bird room or aviary. It is commonly considered to be the egg that is the cause of the trouble, but in reality this is not so, because in numerous instances when it occurs the egg is not fully formed, not yet having its shell. Again, when the victim is submitted to a dry, high temperature it generally recovers its health some hours or even a day or two before the egg is laid. The condition is in reality cramp or spasm of the white muscular fibres of the oviduct, causing this organ to grip the immature egg and thus preventing its normal propulsion to that part of the oviduct where the shell salts are secreted and then deposited on the outside of the egg before it becomes mature and is expelled.

Egg-binding occurs at any time of the year among foreign species, which often breed outside the season our native birds do. Most birds that die without having had any treatment show pneumonia with a fully-shelled or imperfectly-shelled egg in the oviduct.

The simplest, safest and most reliable treatment for this complaint is the exposure of the bird to a high temperature created by a good fire, a hot water or electric radiator or a violet-ray lamp. The cage, with the exception of the side or front to be exposed to the direct heat, should be covered over with a piece of flannel and the heat maintained until the bird is relieved either of its egg or its suffering, when it gains its perch and seems bright and gay. Heat may also be applied by covering a hot-water bottle with flannel, putting it into a box, the bird being placed on top of the covered bottle. Exposure to a gas fire is not without danger to the bird.

If the condition of the bird has not become too serious before this high temperature treatment is adopted, 100 per cent. of recoveries may be obtained. It should not be forgotten, however, that a bird that has had one attack is liable to subsequent attacks during the laying of more eggs. This is observed as much in budgerigars as in canaries and other birds.

One or more eggs may be retained in the oviduct for some time; also they may be propelled backwards and forwards and pass through the infundibular opening of the oviduct and gain the peritoneal cavity, where they often set up peritonitis and death. Again, one egg may be arrested in the anal ring when another egg is behind it in the cloaca. If recognised in time, this could be easily remedied by puncturing the eggs and breaking them down, or by anointing the surrounding tissues and extruding them by gentle manipulation.

Some large parrot-keepers believe in gin as a preventive of egg-binding. Following removal of the ordinary drinking water a teacupful of water containing a teaspoonful each of gin and glycerine is placed in the cage for the bird to drink at will. Others advise one or two drops of 1 part of gin in 4 parts of glycerine given by the beak in the case of smaller birds.

Poisoning by Yew and Other Agents

Pheasants are frequently destroyed by consuming yew, especially during the late summer, autumn and early winter months. The losses from this cause in some game-preserves are enormous and death soon takes place after the ingestion of the plant and its trituration in the gizzard. Not much, if any, yew may be observed in the crop but it can always be found in triturated pieces in the gizzard. Apparently its injurious effects do not set in until after it has passed out of the gizzard into the intestine where it sets up irritation and becomes rapidly absorbed. In this respect yew poisoning closely resembles phosphorus poisoning in fowls and turkeys in which no poison is found in the crop in the majority of cases, but always in the gizzard. It is quite possible that small

birds at times consume yew and are destroyed by it as they are by lead, zinc, arsenic and other agents either used maliciously or by being sprayed on trees or by seed grain being dressed in them before being sown. Occasionally malicious gamekeepers under notice to leave have destroyed all the pheasants in their charge by mixing arsenic with their food. Crows, wood pigeons and other wild birds are sometimes destroyed in large numbers by consuming grain that has been dressed with poisonous material prior to sowing. Birds are sometimes destroyed by phosphorus in wheat sold for birds' food, which, having been put down as bait for rats in the barn, has been accidentally swept up with the corn. It occasionally happens that birds, especially water birds, drinking water contaminated with sheep-dip, are poisoned with arsenic.

Birds can withstand relatively much larger doses of strychnine or nux vomica than can man or other mammals, an ordinary fowl withstanding four times the dose of either of these for man. Some birds, such as the toucans, even thrive on the *Strychnos nux vomica* berries. Most birds are very susceptible to a concentrated solution of common table salt or to brine. Pheasants living on uncleansed maggots in decomposed flesh are often destroyed by the poisons they contain; birds should never be given maggots propagated on the carcases of birds dead of disease for fear of their becoming infected or infested with the microbes or protozoa that killed the others. Flesh and eggs, especially ducks' eggs, containing *Salmonella œrtrycke* or *S. enteritidis* should not be given to birds as they often give rise to the toxæmia peculiar to the species of microbe. Paint containing lead, arsenic or zinc should not be applied to cages nor spilt on the ground inside the aviary. On no account should oil of tar, oil of sassafras or other evil-smelling oil—or, for that matter, any greasy application—be applied to the feathers or the skin of birds, for they generally prove rapidly fatal.

Feather Plucking

It is not an infrequent habit for birds, especially freshly imported foreign ornamental finches not allowed a bath during the long journey, to pluck one another's feathers even if they do not their own. It is also not rare in those that are not allowed a variety of suitable food, whereby the feathers do not develop rapidly but the quills are left fleshy for the victim's neighbours to pluck out and attempt to consume. Feather plucking is sometimes associated with feather scabies and other parasitic infestations, and ringworm.

Self-plucking is one of the worst diseases of the most valued parrots. It is not long before the victim has plucked out most of the feathers that can be got at and as soon as they begin to become replaced the plucking continues and goes on all through life unless preventive measures are taken to obviate it. Some seem to think it is a vice, but in some cases in which an aluminium ruffle is kept on the bird's neck so that he cannot get at the feathers, the feathers often remain undeveloped, especially on one side of the body and not on the other. The trouble is probably an avitaminosis, but it is witnessed more in birds that are given food of animal origin, and tit-bits.

In order to overcome what seems to be a vicious habit the bird should be made to wear an aluminium ruffle and be kept in a cold or cool room. It should be fed on canary seed so as to occupy itself in getting a long meal to attract its attention away from its feathers. Occasionally a few oats and a little sunflower seed may be given as a change. Raw carrot, stalks of green cabbage, pear, apple, grape and banana should be allowed at intervals. Pieces of wood or even a small log with bark on it should be put into the cage for the bird to whittle when he wishes. The plumage should be sprayed with tepid water, or what would be better would be to place the bird in its cage out in the rain from time to time. An occasional spraying with sulphurated potash lotion should be adopted. If after a time the feathers do not seem to grow, the bare parts or those covered with stubby feathers should be brushed over with weak tincture of iodine. From time to time thyroid extract should be given in the drinking water. Hunjadi Janos or Eau Bourbolle may also be given at times with the drinking water. If there is a well-protected garden one wing of the bird may be clipped and the bird turned loose during the day in the finer parts of the year. Keeping the bird in a cold room even in winter and with no cover over its cage at night time is an inducement for it not to interfere with that which protects the heat of its body from becoming dissipated into the cold air.

When the feathers have re-grown the aluminium ruffle may be removed and the bird watched to see that it does not return to its bad habit. Parrots, in this country, do not seem to have a seasonal moult like our native birds. When they do moult it may be very irregular, often with two or three years' interval between the processes—and there is no wonder it is so irregular if we take into account the way they are fed and cramped up in a small cage without any exposure to the rays of the sun or moisture from rain from one end of the year to the other.

Gout

This uric acid diathesis attacks birds and snakes in confinement as it does man at liberty, but is very rare (if it does occur at all) in other

classes of animal. Although frequent in canaries, budgerigars and parrots as well as in poultry, it is not commonly met with in other species. There is undoubtedly a predisposition or hereditary tendency to gout, especially in those that do not receive a variety of vitamins or that are not allowed any exercise. In some species excess protein in the diet is evidently the cause.

Gout may attack the pericardium and epicardium, pleural surfaces of the lung, capsule of the liver and peritoneum, but this is only discovered on *post-mortem* examination. These lesions should not be confused with those of streptothricosis (for which see p. 348). The condition is only recognised during life when it attacks the joints, and the ligaments—especially those of the tarsus, metatarsus and digits, or those of the wing. It is frequently mistaken for bacterial arthritis (joint-ill), septic conditions of the digits and tuberculous infection of the joints.

The digital or metatarsal joints are usually swollen, hot and painful, causing lameness or inability to stand. After a time these parts have a knob-like appearance, showing under the thin transparent skin a yellowish substance, which, when the overlying skin is incised, is easily removed. Several of these small "knobs" may reappear on the digital and metatarsal joints. The material removed is composed mainly of urate of soda.

Gout should be distinguished from tuberculosis and bacterial arthritis affecting the joints.

The food should be changed if possible, Brussels sprout or green cabbage leaves allowed, sodium bicarbonate, lithium citrate, sulphate of sodium or magnesium or sodium salicylate given in the drinking water and the swollen parts painted daily with oil of wintergreen or tincture of iodine.

Epilepsy or Convulsions

Epileptiform convulsions or "fits" are frequent in birds, which usually succumb during the attack. They are mostly the final accompaniment of acute infections, of coccidiosis or of indigestion in canaries, linnets, parrakeets and parrots or other confined birds. They differ from *true* epilepsy which usually shows itself after a period of quiescence during the attacks. The interval during the attacks may be from one to several weeks. This true epilepsy is seen chiefly in parrots. At the beginning of an attack the bird usually utters a piercing cry, seems to appear as if it were seized with a panic, opens and closes its wings spasmodically in a fluttering manner, falls to the ground and jerks the whole of its body until the convulsions cease, when the bird has a period of quietude and then attempts with difficulty to climb up the bars of the cage to gain the perch. It is not long before the bird appears to be in its former spirits and commences to take its food and water as if nothing had happened.

To prevent a recurrence of these attacks the bird should be fed on canary and sunflower seed and have in every 5 oz. of its drinking water 5 grains each of bromide and iodide of potassium daily for at least a week and afterwards every other or third day. The smaller birds which are attacked in the same way may be treated similarly.

Pheasants suffering from yew poisoning often fall from their perches, fluttering to the ground in convulsions just before they die.

Labyrinthine Vertigo

This is often termed "megrims" and is manifested by the bird holding its head on one side or turning it back on the shoulder, or twisting it round on the neck constantly or when it is disturbed or becomes excited. The head may also be so twisted on the neck that the beak is held to one side: to this latter condition the term torticollis is applied.

Labyrinthine vertigo is probably due to disturbance of the semi-circular canals of the ear set up by infection in the canals or by irritation of the internal membrane of the auditory canal by the presence of mites, harvest bugs or other parasites. In the pigeon tribe it is often due to the presence of small-pox virus setting up exudation into the semi-circular canals which eventually become filled with cylinders of cheesy material which give the canals a knotted or beaded appearance. This matter, when rubbed up with saline solution and inoculated into the species or tribe from which it was derived, sets up avian pox.

The affection is of frequent occurrence in budgerigars, bullfinches, birds of the pigeon tribe and occasionally is encountered in canaries, goldfinches, linnets and other cage birds.

It responds in many instances to the instillation of a drop or two of glycerine of iodine into each ear, the head being held in such a position that the dressing reaches the drum. Before hold of the bird is relinquished, the superfluous material should be wiped away with a piece of cotton-wool so that the feathers cannot be soiled with it. This process should be repeated twice a week. To every pint of drinking water 10 grains of iodide of potassium should be added.

Paralysis

Loss of power in the wings or legs or both is not uncommon in every species of bird kept in confinement. It may be of nutritional, parasitic or infectious origin, and is most commonly witnessed in the various species of parrot, in eagles, owls and hawks and other species. In

the carnivorous birds it sometimes appears as an enzoötic. Recoveries are rare even in the case of carnivorous birds being fed on the whole of freshly-killed rabbits, birds, etc.

Sometimes paralysis of the wing is due to injury sustained by the wing in getting caught between the wires, the wing being strained in the bird's struggles to free itself.

Massage of the limbs, giving iodide of potassium in the drinking water and, as a last resource, strychnine and electricity, may be tried.

Specific Ophthalmitis

This occasionally occurs as an enzoötic in canaries in a particular bird room or aviary and eventually leads to destruction of the sight and wasting of one or both eyeballs. It simulates the specific ophthalmitis which so frequently attacks horses used, since the dawn of civilisation, in the great wars of Europe, Africa and other continents. Nothing is known as to its cause.

The disease attacks many canaries—brood after brood in the same place. Starting as a conjunctivitis with a more or less watery discharge, soon followed by a sero-mucous discharge from the eyelids, it afterwards attacks the eyeball, leading, in many cases, to its wasting. The disease does not seem to impair the general health of the birds. Probably it is due to a filtrable virus, possibly transmitted by a vector. There does not seem to be any reliable method of treatment, but mercurochrome applications should be tried. The scientific study of this and many other diseases of birds and other small animals may eventually prove of inestimable value in the unravelling of some of the mysteries of human maladies and of those of the larger animals.

Cataract

Although occasionally seen in very aged birds such as those of the parrot family, cataract is mainly encountered as an hereditable disease in the crested and also the crest-bred Norwich canary. It is more prevalent where inbreeding is carried out intensively to fix the type of bird, but experience has taught fanciers to eradicate it by refusing to breed from birds with recessive characters.

I have seen diffuse cataract, of over 40 years' standing, in both eyes of a large sulphur-crested cockatoo which had been in one family for over a century. It is occasionally seen attacking one eye in wild birds such as the blackbird, probably due to injury by a shot from a gun. It is not uncommon in small birds such as the canary.

Conjunctivitis

This appears with a more or less profuse watery discharge from the eyelids, which may be swollen even to the degree of hiding the eye-ball itself. Sometimes the infra-orbital sinus below the eye swells and stands out prominently.

This condition is more frequently seen in parrots, crows, jays, magpies, doves, pigeons and pheasants than in the smaller birds such as the canary or other finches. It is often associated with deadly infectious diseases such as psittacosis, the Australian parrakeet catarrhal fever, avian pox and contagious catarrh.

In some of the smaller birds such as the newly-caught bullfinches, a conjunctivitis associated with *ulcerative keratitis* may be encountered as an enzoötic, every bird of a large collection or consignment showing it.

In those canaries with profuse feathering around the eyes the feathers surrounding the eyelids are sometimes so distorted that they rub on the eye-ball and irritate it to such an extent that a profuse watery discharge is produced. To prevent this trouble continuing the distorted feathers should be plucked out.

In the simpler forms of conjunctivitis and keratitis there should be instilled into the eyes a few drops of 1:1,600 solution of chinosol or 1:2,000 of biniodide of mercury. In the more chronic forms seen in the larger birds the treatment should be continued until the trouble has disappeared and be supplemented with nourishing food.

When the affection accompanies a general infectious disease it abates only after the infection has disappeared and recovery takes place.

Tumours, warts or cysts on the eyelids are either infective (such as those of a tuberculous nature), staphylococcic, mucoid or cheesy. They can be readily removed by a very small pair of scissors or in the case of cheesy cysts with a small needle. In parrots they are generally of tuberculous origin.

(To be concluded.)

IMPORTED HORSES

Since N.F.U. headquarters asked the county branches for information about the effect on prices of the importation of Belgian draught horses many different opinions have been expressed. It cannot be said that the market value of a good horse has fallen. Good horses are scarce, but in the long run a free market here for Continental horses is bound to set back horse breeding at home, which is now regaining some lost ground.

Arable farmers do not want to pay more than they need for working horses but on the balance farming opinion recognises the sense of protecting horse breeding as well as other sections of the livestock industry.—*Farmers' Weekly.*

Some Toxaemias of Animals Due to Anaerobic Organisms

A Comparative Pathological Study of Recent Work, with Particular Reference to the Toxaemia of Intestinal Obstruction in Man*

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The conditions in which these organisms are of material importance in human infections fall into three main groups: (1) wound infection with gas gangrene, (2) puerperal infection, and (3) toxaemia in intestinal obstruction and peritonitis.

Of the first I shall say little. The circumstances or accessory factors favouring infection of wounds with the anaerobic sporing bacilli are well known, and this type of infection presents no particular problem. It is nevertheless desirable to keep in mind the fact that there are such essential accessory factors when considering other types of anaerobic infection. Of the second group—puerperal infections—it may at once be said that they are in the main complications or sequelae of abortion, and not of normal labour. They are therefore very closely allied to the first group of wound infections. Attention cannot fail to be attracted to them because of the very high mortality associated with them, and the difficulty of devising any very successful treatment.

The third type of anaerobic infection—namely, that alleged to cause the toxaemia associated with intestinal obstruction and general peritonitis—is easily the most interesting group, and despite a very considerable amount of experimental work and clinical observation there are many points relating to it which are obscure. At present it may safely be said that there is no agreement with regard to the pathogeny of the toxaemia associated with intestinal obstruction. The most noteworthy contribution to the subject of recent years was that by B. W. Williams (1926), in which he pointed out, in the first place, the striking resemblance of these cases to the toxaemia of gas gangrene; secondly, the frequent presence of many species of anaerobe in the alimentary tract; and thirdly that the obstructed small intestine provided ideal conditions for the germination and proliferation of anaerobic spores reaching it from the stomach. Since the publication of Williams's paper many fresh investigations have been attempted, and in quite a number his findings, and in particular his success with the use of anti-gas-gangrene serum, have been doubted. One of the most recent pieces of work is recounted in a paper by R. L. Holt (1934), who, after examining the same question, comes to the conclusion that the effect of the exotoxin produced by *B. welchii* is negligible, and that the use of antitoxin—that is, anti-*B-welchii* serum—is not warranted. To us as bacteriologists this is an important question. Are these anaerobic intestinal organisms the chief or main cause of the toxaemia, and can suitable antitoxins be of great use, or is the presence of numbers of anaerobes incidental and comparatively unimportant?

My object is not to attempt an answer to these questions, but to bring to notice some experimental work with regard to a number of animal infections of somewhat similar nature, and to suggest that, in the light of the investigations to be described, much of the work and many of the papers relating to human infections might well be revised. If any excuse be needed for the bringing before you of this work by one not directly engaged in it, my apology must be that I have taken a very great interest in the Australian work, have had some share in initiating it, have followed closely its progress at the hands of old students of my own, and have formed a high opinion of the quality of the work itself and of its scientific and economic value.

"Black Disease" (Infectious Necrotic Hepatitis) of Sheep

This is a disease of sheep widely prevalent in New South Wales, Victoria, and Tasmania, and involved losses, a few years ago, probably exceeding £1,000,000 per annum in value. It attacks sheep of all ages and breeds, and generally those animals which are in the best condition. Affected animals are rarely seen alive, and when so seen usually die within one or at most a few hours. The most thoroughgoing and ultimately successful investigation of the disease was made by A. W. Turner (1930), beginning as a research scholar in my laboratory and continuing his work at the Pasteur Institute, at the Institute for Animal Pathology in Cambridge, and finally as a research officer of the Council for Scientific and Industrial Research here in Melbourne. Many other workers, however, contributed something to the story, notably Gilruth, Albiston, and Dodd.

As is the case with all these anaerobic diseases of sheep, putrefactive changes in the carcase are extremely rapid, and *post-mortem* invasion of the blood and tissues with anaerobic sporing bacilli of various kinds is common within a short time after death. Dodd emphasised the necessity of confining bacteriological investigation to those affected animals detected whilst still alive and examined immediately after death. All the subsequent workers have taken great trouble to observe this rule. Time forbids my

*Abstract of a paper read in opening a discussion in the Section of Pathology and Bacteriology at the Annual Meeting of the British Medical Association, Melbourne, 1935. Reproduced, by permission, from *The British Medical Journal*, February 29th, 1936.

dealing with anything but the salient features of the disease, following the description by Turner. When deaths are occurring among sheep on a property where black disease is prevalent, it is possible by dint of early rising and close observation to pick out from time to time sheep which, on disturbing the flock, are seen to lag behind the rest. These, on continued closer inspection, are found to be dull, have a desire to lie down, soon become comatose, and die in a short time—from a few minutes to a few hours—with little if any rise of temperature.

Findings

Turner was able to examine fifteen cases taken at the moment of death, and to follow up each with a carefully planned pathological and bacteriological examination. The outstanding observation in all these cases, and confirmed in numerous subsequent ones, was the presence of one or more necrotic areas in the liver, usually only one or two, roughly circular, and from 2 to 3 cm. in diameter—sharply defined, yellowish white, and with a zone of venous congestion several centimetres wide round them. Further, in all these livers there were definite signs of fascioliasis (infestation with the liver-fluke), and quite often one or more fluke burrows were closely adjacent to the necrotic areas previously mentioned. These necrotic liver areas in cases of black disease were first observed by Gilruth (1911), and also by Cleland (1913). Dodd noticed their constant presence, and it was he who first insisted that in all cases they were associated with recent invasion of the liver by migrating flukes. Turner rapidly came to the conclusion that fluke infestation was an essential factor in producing the necrotic foci in the liver, and many of his sections show young flukes—3 to 5 mm. long—in early necrotic lesions.

Microscopical examination of the necrotic liver areas at early stages revealed a marked infiltration with eosinophil leucocytes, and among these wandering cells were to be seen a few Gram-positive large bacilli in the vegetative stage. In older lesions the bacteria had proliferated, and could be found throughout the necrotic area, and notably at its periphery, but if the material for section was taken at the moment of death no bacilli were to be found in the living parenchyma in the great majority of cases. If carcases were left for a few hours and then examined, bacilli were found throughout the liver tissue. No bacilli were to be seen in sections of kidneys, spleen, or lymph glands.

Bacteriology

A number of investigators have each added something to the elucidation of this problem of bacteriology. Gilruth undoubtedly saw the bacillus in sections. Dodd emphasised the importance of the necrotic areas, and secured cultures of an organism. Albiston (1927) isolated the organism in pure culture, and expressed the opinion that it resembled *B. oedematiens*, and it was with a culture supplied by Albiston that Turner and Davesne, working in Weinberg's laboratory, determined its identity as a strain of *B. oedematiens*. Subsequently, from fresh *post-mortem* examinations conducted under the conditions described, it was found possible to secure pure cultures quite readily by means of material collected in sterile Pasteur pipettes from the necrotic foci in affected livers.

The toxin was thermolabile, and heating to 60°C. for one hour destroyed it; it was largely absorbed by Seitz filter pads, but readily came through a Pasteur-Chamberland L_2 filter. It was found toxic for a number of different animals, and after either subcutaneous or intramuscular injection of a dose of approximately 1 m.l.d. in a sheep the animal died with *post-mortem* appearances similar to those produced by injection of a live culture, even to the characteristic congestion in the stomach and small intestine. All the evidence thus suggests that the pathogenic effects of *B. oedematiens* are due to its production of exotoxin.

Complete proof of the identity of the organism was forthcoming as the result of the neutralisation tests which Turner used. He states: "For the identification of pathogenic micro-organisms, particularly anaerobes, the most valuable test, and indeed the crucial one, is undoubtedly the cross-immunity reaction—that is, the neutralisation of cultures and toxins by antisera made from known microbial species, always provided the purity of the organisms used is absolutely above suspicion." The organism from black disease cases was therefore tested against anti-*B.-oedematiens*, anti-*B. welchii*, anti-*Vibrion septique*, anti-*B.-sporogenes*, and anti-*B.-histolyticus* sera. The anti-*B.-oedematiens* serum neutralised all the strains recovered, whereas all the rest were without effect.

But further work was necessary for a complete understanding of the aetiology of black disease. What were the accessory factors—the special conditions—determining infection?

Turner's experiments with the spores of *B. oedematiens* in sheep showed definitely, in the first place, that toxin-free spores isolated from cases of black disease are innocuous (*a*) when injected either subcutaneously, intramuscularly, intraperitoneally, or intravenously in large doses, and (*b*) when ingested; and that after ingestion they can be recovered from the liver in twenty-four hours; and secondly, that these spores remain latent, many having been consumed by phagocytes, but numbers of them remaining free, and that they persist in liver, spleen, and bone marrow for periods up to nine months after injection, and for at least five months after ingestion. They can be recovered in culture from these tissues, especially if, following Neisser's method, the whole organ or a large piece of

not less than 50 grammes is incubated. Further, Turner investigated the condition in forty-two healthy sheep from a property heavily infected with black disease, and by the means described was able to recover positive cultures of *B. oedematiens* from the livers of eighteen of them (43 per cent.). Thus it is quite evident that latent spores are present in a considerable proportion of healthy sheep which have been feeding on infected land.

Black Disease (Experimental) in Rabbits

Toxin-free spores of *B. oedematiens* injected intravenously into the ear vein, together with an injection into the liver of 0·25 c.cm. of a 25 per cent. solution of calcium nitrate, caused the death of three rabbits—two on the second day and one on the third—with lesions resembling those of natural cases in sheep. In a similar manner infection was produced in rabbits by giving the spores intravenously to animals which had been fed with cysticerci, the larval phase of *Taenia serrata*, which larvae encyst in the liver. Even more applicable to the condition in sheep was the successful experiment with toxin-free spores together with cercariae of *Fasciola hepatica*, the liver-fluke.

Thus spores of *B. oedematiens* may be taken in by ingestion, may remain latent and innocuous in the liver and spleen for months, and may then be activated so as to germinate and multiply, by means of trauma or injury due to parasites, or to drugs.

The success of vaccination with anatoxin or anaculture against *B. oedematiens*, and of anti-fluke measures, in the control of black disease throughout the affected districts in Australia, is a sufficient proof of the soundness of the research.

Infectious Enterotoxaemia of Sheep

This condition is nearer still to the problem of infection in man. Attention was first called to the disease in 1915, owing to an outbreak in the Beverley district of West Australia, but the first thoroughgoing investigation was commenced in 1925 by H. W. Bennetts, veterinary pathologist to the Department of Agriculture of Western Australia. The disease had extended in the course of ten years, so that it was causing very serious economic loss to the sheep industry, often amounting to from 5 to 15 per cent. of sheep in infected districts. A special type of sheep husbandry is practised in this part of West Australia. There is practically no permanent pasture, but sheep are depastured on green crops, oats, wheat, rape, or on weedy fallows. The disease affects all ages and all breeds, but especially young adult sheep, the "pick of the flock" so far as condition goes.

Bacteriology

An anaerobic sporing organism closely resembling *B. welchii* was isolated without difficulty from mixed small intestine contents, and in seventeen out of the eighteen cases it was the only sporing anaerobe found. The toxin was found to be thermolabile, being destroyed by heating to 70°C. for half an hour. From the crude product a concentrated purified form was obtained by precipitating with 60 per cent. ammonium sulphate, drying the precipitate, and redissolving it in distilled water. This toxin would keep for months. Experimentally the toxin from culture filtrates produced the same fatal toxaemia as did the filtrates of intestinal contents, and both produced effects resembling very closely those produced by the toxin of *B. welchii*. Controls of bowel filtrates, prepared in the same way but from normal sheep, were innocuous when given intravenously or intramuscularly into mice and guinea-pigs in doses greatly exceeding the minimal lethal dose of pathological filtrates.

In the early stages of the work (1928-9) it was thought that the organism concerned was in fact *B. welchii*, and both toxin and bowel filtrates were tested against anti-*B.-welchii* serum prepared by Burroughs Wellcome. Neutralisation occurred, and this antiserum was an effective prophylactic against infective doses. All succeeding experiments, however, with later batches of anti-*B.-welchii* serum of the same make, were invariably unsuccessful, whereas an antiserum prepared by the immunisation of animals (sheep) with the organism recovered from affected sheep was an efficient protective. The organism was evidently not *B. welchii*, and Bennetts named it *B. ovitoxicus*. These neutralisation experiments have been repeated many times with anti-*B.-welchii* serum from different sources, and always with the same negative result. Anti-*B.-ovitoxicus* serum, on the other hand, protects against the homologous toxin and against bowel filtrates from affected animals.

Experimental Reproduction of the Disease

1. Inoculation of sheep with sterile culture filtrates of *B. ovitoxicus* intramuscularly caused death in twenty-four hours with symptoms and pathological findings resembling those of natural cases. A similar result was obtained in sheep by the intramuscular injection of bowel filtrates from natural cases, whereas control sheep which were injected with bowel filtrates from normal animals remained unaffected.

2. Ingestion of culture filtrates (50 c.cm. per day for many days on end) and of small intestine contents from natural cases produced no ill effects in sheep. Attempts were then made to secure infection by the administration of ox bile as an intestinal irritant some hours previous to drenching a sheep with an enormous dose of culture filtrate; similarly, by giving a large dose of sodium bicarbonate through a stomach tube, immediately followed by culture of *B. ovitoxicus*. In both cases repeated experiments gave

negative results. Next, remembering the suggestion that bowel stasis might be the condition necessary, attempts were made to bring about stasis by means of large doses of opium, and finally with a combination of opium and belladonna given in milk. Three sheep so treated, and receiving two doses of *B. ovitoxicus* culture, became infected and died in nine, sixteen, and twenty-six hours respectively from the commencement of the experiment. Control sheep with the drugs but no culture, and others with culture but no drugs, were unaffected. Four out of six sheep so treated died with typical symptoms and characteristic bacterial smears from the jejunum. The other two showed symptoms of toxaemia, but recovered.

Factors Predisposing to Infection

Several possible factors have been suggested as affecting the vegetation and multiplication of *B. ovitoxicus* (or *B. welchii* in human cases) in the small intestine—namely, achlorhydria, dietary deficiencies, high protein intake, and more particularly bowel stasis—and the particular form of sheep husbandry in West Australia, with a diet deficient in fibre, and therefore not encouraging peristalsis, supports the suggestion that this last is a material factor. The habit of sheep to feed close to the ground, and the practice of depasturing them on cultivated land, allow of their taking up a high proportion of soil with their food, soil which is presumably contaminated with the organism in many cases.

From all the evidence it may fairly be said that this disease is a toxaemia due to the absorption of the toxin of *B. ovitoxicus* from the small intestine, and is quite independent of any tissue invasion with the organism. This view is strongly supported by the fact that vaccination of sheep with "anaculture" (whole culture of *B. ovitoxicus* treated with formalin and incubated) has given good results as a prophylactic measure. As an example, on one property, in 1930, 925 sheep were vaccinated and an equal number left unvaccinated. In the next disease season, of the vaccinated two died of enterotoxaemia (0·2 per cent.), and of the unvaccinated forty-two died (4·6 per cent.).

Conclusion

And now, having come to the end of my very summary account of these researches, there are a few points which appear of sufficient importance to deserve emphasis.

Experimental work to elucidate the matter of human infection has usually been done on the dog. Here in the diseases brought to your notice the affected animal is the sheep. The study of these conditions is of value because (1) they are natural infections, (2) the numbers concerned are large, (3) experiments can be controlled in many ways by normal sheep available at every abattoir, and (4) the experimental animal for a crucial test of the reproduction of the disease or its prevention is the same animal as is naturally attacked.

A point of great interest has been to discover the conditions allowing of infection. Williams wisely pointed out in his paper that it requires very particular conditions for the establishment of *B. welchii* infection in living human tissues, and our survey has provided ample justification for that remark, with a more general application.

The avoidance of any complication from *post-mortem* invading organisms has undoubtedly facilitated these researches. It is easy in the sheep, it is very difficult in man, and the confusion which may follow must be reckoned with and avoided if possible. The precise identification of an organism and the determination of a particular type of strain with its own specific toxin is an essential feature of any successful investigation. As with the pneumococcus so with *B. welchii*—typing is essential if serum therapy or prophylaxis is to be of use.

Lastly, the presence—potential or actual—of latent spores must be considered. Let us fully understand what are the possibilities of infection, and the conditions which make it actual, and we shall be well on the way to the discovery of means of prevention.

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An informal inquiry is to be held by officers of the Ministry of Agriculture and nominees of the Central Council of Milk Recording Societies of England and Wales with a view to making milk recording easier and cheaper.

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Following a long conference at Warsaw of Rabbis and Jewish leaders from all parts of Poland, it was announced that the 3,500,000 Jews in Poland will be asked to abstain from eating meat for one month. All Jewish-owned shops and enterprises will be closed for 24 hours. This decision will take effect when and if Parliament enacts the Bill now before the Lower House which prohibits the slaughtering of animals for human food in the way prescribed by the ancient Jewish ritual.—*Daily Telegraph.*

Clinical Communication

A CASE OF EARLY CYSTIC CALCULUS IN THE BITCH

T. WHYTE STOBO, M.R.C.V.S.
Hersham, Surrey

Subject.—A three-months-old cocker spaniel bitch.

History.—The bitch was bought at the age of two months, apparently in good bodily health and condition. After two or three days some haematuria was observed. Micturition was otherwise normal and no serious thought was given to the puppy by the owner until a month later, when it was brought to the surgery in a semi-comatose condition. No urine had been voided during the last 24 hours. Distress had been evident, with no desire to eat or drink.

Examination.—The bladder was straightway made the centre for examination.

Abdominal palpation revealed a greatly distended bladder and at its neck a rounded, hard swelling, the size of a small walnut, could be felt.

Calculus was diagnosed and manipulation forward into the fundus of the bladder to relieve symptoms was successful.

Emptying of the bladder was spontaneous. The evil-smelling contents were unrecognisable as urine, having the appearance of pure blood containing numerous shreds of vesicular mucous membrane.

On humane grounds the puppy was destroyed.

Post-mortem examination revealed the calculus shown in the accompanying photograph. Weight, 2·97 grammes.

Photograph by courtesy of the Histological Department, Royal Veterinary College.

A cystitis was present, from which the animal could never have recovered. The rest of the *post-mortem* findings were macroscopically regular.

Discussion.—Cases of urethral calculus have been observed in male puppies at a similar age. In the female, however, this seems to be of more than usual interest in view of the ease with which they pass granular particles and small calculi.

Diet consisted of meat and biscuit. The water was not unduly hard and litter brothers and sisters have shown no similar trouble.

Abstracts

[Chloral Citrate as a General Anaesthetic for Horses. Anaesthetisation of the Standing Animal. (Trans. title.) Dumas, A. (1935.) *Bull. Acad. vét. France.* **8.** 5. 275-277.]

Chloral citrate is the most suitable drug for the production of general anaesthesia in the horse, as although it is an irritant, it may be injected intravenously, it is easy to handle, possesses excellent keeping properties and is cheap. There is also a wide margin of safety in its use, since 11 g. is sufficient to produce anaesthesia, whereas harmful effects are not seen until 37 g. per 100 kg. body weight have been given. Its administration to the standing animal is carried out as follows:—

A trocar is inserted into the jugular vein, care being taken that the instrument has entered the vein properly and cannot slip out if the animal moves. This is facilitated by previously placing a cord round the base of the neck. The trocar is withdrawn and the cannula is attached to the injection apparatus. This consists of a glass funnel which is connected to the cannula by means of a rubber tube about eight inches long and provided with a short glass inspection tube in its lower third. The tube is filled with anaesthetic solution before its attachment to the cannula. The neck-cord is now released and the funnel raised in order to allow the anaesthetic to run in. If the animal moves, assurance can be obtained that the cannula is still in the vein by lowering the funnel and watching to see if blood enters the glass tube. On completion of the injection, blood is allowed to flow through the cannula before it is withdrawn. One or two minutes later the horse quietly lies down in a normal manner, one man being sufficient to steady the head, and anaesthesia is complete a few seconds later.

J. A. N.

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[Equine Cutaneous Leishmaniasis: Treatment with Berberine Sulphate. Bennett, S. J. C. (1935.) *J. Comp. Path. & Therap.* **48.** 3. 241-243.]

Richardson in 1926 recorded a case of infection of the spleen in a horse with Kala-azar in

Uganda, and in the present paper Bennett makes the first record of cutaneous leishmaniasis in a horse.

The parasites were discovered in smears from a persistent ulcer on the abdomen of an eight-year-old Sudan pony stallion. The lesion was about 3·5 mm. in diameter with raised edges and a depressed granulating centre. Leishmania bodies were very plentiful in scrapings from the granulating tissue and were quite indistinguishable, either as to situation or morphology, from *Leishmania tropica*, having a short, straight kinetoplast and being, when intracellular, situated in the usual type of mononuclear cell.

Treatment was attempted with berberine sulphate. Four cubic centimetres of a 1 per cent. solution of the acid sulphate were injected through seven or eight punctures (evenly spaced) around the edge of the sore. A complete cure followed this single treatment—healing was complete at the end of five weeks. The treatment was followed by a rather troublesome oedema which, however, disappeared in the course of time. J. S. S.

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[Bovine Trichomoniasis. Cameron, H. S. (1935.) *Cornell Vet.* **25.** 2. 99-110. (13 refs.)]

This report embraces a two years' study of the disease in the United States by the author, together with the findings of other workers.

A full examination of fœtuses from herds free of abortion disease was made. Two apparently distinct species of Trichomonad parasites are described. One was avirulent and probably *T. ruminantium*. The pathogenic species was *T. fœtus*. It is larger, less motile and more difficult to maintain in culture. The author's experimental work and clinical findings suggest that it is a true pathogen.

The only natural transmission of the disease is by the bull during copulation. The disease causes a period of sterility with repeated turning to the bull as well as early abortion. No symptom of the disease can be deemed diagnostic. Diagnosis in females must be made microscopically, either of fresh moist material under a 16 mm. objective or of a culture after incubation overnight of suspect material in 0·5 per cent. Loeffler's dehydrated blood serum in physiological saline solution. Vaginal infection is transient, but parasites may be found in the uterine discharge or the abomasum of fœtuses. The examination should be made within 48 hours of the abortion. In bulls a swab from the sheath is similarly incubated. The seminal fluid is best examined after the spermatozoa have lost their motility.

Prognosis in females is favourable provided they are not bred from until proved negative. Positive bulls should be culled, as they probably remain carriers.

Control measures are therefore based upon microscopical findings. No bulls should be used until proved negative and infected females should be isolated and given sexual rest until found negative.

C. V. W.

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[The Occurrence of a Typhoidal Bacilluria in a Horse. Petrie, G. F. (1936.) *J. Path. & Bact.* **42.** 1. 75-78.]

This unusual case occurred in an aged mare that had been immunised with killed and live suspensions of smooth virulent *B. typhosus* containing the Vi antigen described by Felix [Felix and Pitt (1934); Felix, Bhatnagar and Pitt (1934)].

Following a bleeding in which 8 litres were withdrawn, the temperature rose to 102°F. The horse showed malaise, inappetence, anaemia of the mucous membranes and muscular wasting. The mean pulse rate was 48-52. Blood cultures were negative throughout the illness. On the fourth day the urine was cultured and a growth of *B. typhosus* was obtained.

Treatment with hexyl resorcinol gave temporary improvement, but after 25 days of illness it was decided to slaughter the horse.

On *post-mortem* examination no definite macroscopic lesions were seen. Cultures from the liver, spleen and lungs were negative, but the organism was obtained from the kidneys. The strain isolated had not lost its Vi antigen nor its virulence.

D. L. H.

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[The Treatment of Dictyocaulosis of Sheep and Calves in Russia. (Trans. title.) Orloff, I. W. (1935.) *Bull. Acad. vét. France.* **8.** 7. 390-401. (25 refs.)]

In view of the conflicting opinions existing on the value of intratracheal injections for the treatment of lungworms in sheep and calves Orloff discusses the causes which have discredited the value of these injections and describes the technique adopted in Russia. Dictyocaulosis is generally limited to the posterior and middle lobes of the lungs in the neighbourhood of the chief bronchi, and is rarely seen in the anterior lobes. This has an important bearing on the position to be selected for dosing affected animals. For instance, in the natural standing and lateral positions the anterior lobes are the lowest portions of the lungs. When, however, the animal is placed in a sloping dorsal position, with a slight lateral inclination, the angle between the trachea and bronchi is reduced and the posterior and middle lobes are now the lowest. This position is, therefore, the most suitable for treatment against *Dictyocaulus*. As this position has not been adopted previously the results of treatments for lungworms have been inconsistent.

Sheep are maintained in the appropriate position on a specially constructed table, and calves on a trough—in each case the head end is raised. The feet of the animal are held securely by two assistants and the head is extended. The injection is made through an inter-annular space in the upper third of the trachea. After the injection has been made the head and feet are released and the assistants make the sheep assume a sitting position for 20 to 30 seconds; it is then allowed to get up. Numerous formulae were tested, the best being found to be those containing iodine. A commission was appointed to try out these prescriptions and it was found that the two following were equally efficient, though the second was the cheaper: (*a*) Tinct. iodi (10 per cent.) 1 c.c., glycerine 50 c.c., distilled water 150 c.c.; and (*b*) Iodine 1, potassium iodide 1·5, distilled water 100 c.c., made up to 1,500 c.c. with tap water. For sheep, doses of 10 c.c. are injected on two successive days, and calves receive from 20 to 50 c.c. according to their age. J. S. S.

VIRUS DISEASES IN AUSTRALIA

Research into virus diseases occupies a prominent place in the sixteenth annual report of the director of the Walter and Eliza Hall Institute of Research, Melbourne. A survey of the incidence of psittacosis in Australian parrots has revealed that a surprisingly large proportion of these birds were infected, certain species even proving to be naturally infected in the wild state. The conditions among wild birds are parallel with those in California, there being a high incidence, mostly symptomless, among young birds, and many non-infective though diseased old birds. The lesions produced by the isolated virus strains corresponded closely with those described for strains defined in Europe and America during the epidemic of 1929-30. In monkeys the Australian virus produced severe illness with characteristic pneumonic changes, and instillation into the nose of the anaesthetized rat caused acutely fatal psittacosis pneumonia. Since the local virus is thought to be capable of inducing disease in man, medical practitioners are advised to look out for cases. The relations of Australian *x*-disease and the louping-ill virus, and of louping-ill in sheep to human poliomyelitis, are being investigated. A form of inapparent louping-ill in the rat seems to parallel the asymptomatic infection in children with poliomyelitic virus, which produces the specific antibodies found in the serum in most adults. The chorio-allantoic membrane of the developing egg has proved a useful medium, favouring the growth of psittacosis and mouse ectromelia in addition to that of other viruses. Many experiments have shown the possibility of indefinitely continued transmission from egg to egg, the virus multiplying within the superficial ectodermal cells of the membrane. The value of this "plating method" for viruses, analogous to that used in bacteriophage technique, has been heightened by the employment of older eggs, in which non-specific lesions are rare and slight, the individual virus foci are often much more numerous, and generalization is slower and death delayed.—*British Medical Journal*, February 15th, 1936.

N.V.M.A. Divisional Reports

SOCIETY OF VETERINARY PRACTITIONERS

The following series of meetings has been held by this Division and the proceedings of the first of these are included in this report:—

London: at the Holborn Restaurant on Monday, February 17th.
Birmingham: at the Grand Hotel on Thursday, February 20th.
Carlisle: at the Crown and Mitre Hotel on Monday, February 24th.
Leeds: at the Hotel Metropole on Tuesday, February 25th.
Oxford: at the Clarendon Hotel on Wednesday, February 26th.
Peterborough: at the Angel Hotel on Thursday, February 27th.
Chester: at the Queen Hotel on Friday, February 28th.
Stirling: at the Golden Lion Hotel on Saturday, February 29th.

At each of these meetings the matters under discussion were as follows:—

(*a*) The present position of the general practitioner in relation to the public services, and his future position and place in such services under the county councils, municipal authorities and the Ministries.

(*b*) The bearing of the questionnaire now issued by the N.V.M.A. upon the above, and the vital importance of giving the questionnaire serious and careful consideration.

Very unfortunately, the President of the Division, Mr. Donald Campbell, was unable to preside at any of the series of meetings as he had been taken ill, and had had to go into a nursing home. At each meeting a vote of sympathy and good wishes was passed, to be sent to him.

At the first meeting, held in London on February 17th, following upon the ordinary business and the introduction of the Chairman, an address was given upon the two subjects cited above by Mr. E. P. Edwards, of Mold, and a general discussion followed.

This procedure was followed at each of the subsequent meetings, the address by Mr. Edwards being introductory of the subjects and a discussion upon it and upon the questionnaire following.

The main objects of the meetings were to examine the present position of practitioners with regard to the public services and their future place within them, and in these connections to endeavour to elucidate the meaning and scope of the series of questions contained in the questionnaire issued to the whole profession by the N.V.M.A.

Meeting in London

The London meeting was held at the Holborn Restaurant, Kingsway, London, W.C., on the evening of Monday, February 17th, 1936, when the following members signed the attendance book: Messrs. A. H. Andrew, L. S. Balls, J. N. Bushman, T. A. R. Chipperfield, J. A. Craft, J. B. Dier, J. I. Edgar, E. P. Edwards, G. Elmes, Lieut.-Colonel H. Greenfield, Messrs. P. S. Howard, H. Kirk, F. Marks, G. Dunlop Martin, Dr. J. McCunn, Mr. A. Millar, Professor W. C. Miller, Messrs. D. T. Reid, A. Spicer, R. J. Stow, H. W. Steele-Bodger (Hon. Secretary), P. Vincent and T. L. Wright.

The meeting unanimously appointed Mr. George Elmes, of St. Albans, to the Chair.

The minutes of the previous meeting, having received publication in *The Veterinary Record*, were taken as read and were confirmed and signed as correct.

Nominations for Membership.—The following nominations for membership were made: Messrs. J. W. Beaumont, Louth, Lincs.; A. L. Bragg, Tarporley, Cheshire; E. A. Burgon, Haverhill, Suffolk; J. J. Collins, Bowdon, Cheshire; W. Collinson, Sheffield, Yorks.; J. L. Cormack, Coventry, Warwickshire; F. Crowhurt, Marden, Kent; W. Denington, St. Albans, Herts.; M. Dugdill, Patrington, Hull, Yorks.; W. Fyrth, Bridport, Dorset; A. Gibson, Kirkcudbright; J. Godber, Newark, Notts.; H. W. Good, Scarborough, Yorks.; T. C. Hall, Knaresborough, Yorks.; D. Hamilton, Harrogate, Yorks.; R. Hayes, Sherburn-in-Elmet, Yorks.; E. J. Heather, Oxford; William Hepburn, Aberdeen; S. F. Hodgman, Shortlands, Kent; H. R. Laycock, Sheffield, Yorks.; G. H. Leader, Newmarket; S. Littler, Newark, Notts.; C. W. Loy, Ludlow, Salop; W. F. McConnell, Ledbury, Herefordshire; A. O. McDowell, Gloucester; T. McGhee, Tattenhall, Cheshire; E. S. Martin, Christchurch, Hants.; E. W. Parkes, Wellingborough, Northants.; N. F. Pollock, Cromer, Norfolk; J. P. Railton, Kington, Herefordshire; E. G. Robertson, Wimborne, Dorset; H. C. Rockett, Salisbury, Wilts.; S. Smith, Horsham; H. C. Swann, King's Lynn, Norfolk; R. Turnbull, Lewes, Sussex; J. A. Turner, Bromley, Kent; P. J. Turner, Bromley, Kent, and F. W. Willett, Staines, Middlesex.

Election of New Members.—The following gentlemen, having been nominated at the previous meeting, were unanimously elected members of the Society: Messrs. G. R. Benbow, Leicester; T. Bowett, Worksop; J. A. Brown, Woolton; J. G. Cattell, Canterbury; T. B. Fleming, Lesmahagow; A. C. Ford, Linlithgow; A. B. Hendry, Nairn; Major T. Hicks, Sleaford, Lincs.; Major T. H. Hopson, Leicester; Messrs. J. M. Ingram, Hertford; T. H. R. Irwin, Bideford; James Martin, Wellington, Salop; T. D. M. Martin, Wellington, Salop; James Martin, Junior, Newport, Salop; G. S. Muir, Bridgnorth; F. L. Munslow, Rye; J. Stanley Pike, Swansea; J. W. Procter, York; D. E. Pugh, Swansea; V. E. Senior, Sutton Coldfield; H. C. Shingler, Banbury; James Somerville, Glasgow; H. Thornton, Leicester; J. F. D. Tutt, Winchester; Professor G. W. Weir, Glasgow; Messrs. R. Wynne Williams, Dolgelley, and T. L. Wright, Putney, S.W.15.

ADDRESS BY MR. E. P. EDWARDS

The Chairman now called upon Mr. E. P. Edwards, of Mold, to give an address, which the latter had prepared as an introduction to the subjects before the meeting for discussion.

Mr. E. P. Edwards, complying, gave the following address, which was heard with much interest and appreciation:—

(*a*) The present position of the general practitioner in relation to the public services, and his future position and place in such services under the county councils, municipal authorities and the Ministries.

(*b*) The bearing of the questionnaire now issued by the N.V.M.A. upon the above, and the vital importance of giving the questionnaire serious and careful consideration.

We are here to discuss our position as practitioners, now and in the future, in relation to the public services. The "public services," I take it, means such work as is concerned with the control, prevention and eradication of contagious and infectious diseases of the lower animals, particularly those communicable to man. Then it means also the control and inspection of all animal products used as food by man, these being, of course, meat and milk.

The full purpose and function of the veterinary profession is and always will be to serve the farmer, the agriculturist and others in controlling, preventing and eradicating those diseases of all the domesticated animals capable of such control, and of treating those diseases, accidents and surgical conditions to which the animals of the farm and the home are subject. The private owners of all the domesticated animals, whether on the farm or in the home, all in turn look to the practitioner for his skill and advice in the prevention and treatment of the many and varied ills that may befall animals.

I wish to emphasise that now and in the future, by far the greatest function of the veterinary profession is and will be to provide these daily and general services to the farmer and the vast agricultural industry—the basic industry of the country—and to emphasise also that anything, or any policy which either directly or indirectly affects adversely the efficiency or the adequacy of that service, will bring disastrous results to the agriculturist, and

ruin the usefulness of the profession as a unit of the State.

Now, if for convenience we may call these functions, the "general services," the veterinary surgeon has also "special services" to render which he may name his "public health services," and, as far as we now are specially concerned, these arise entirely in relation to diseases of the cow. Primarily, it is tuberculosis, with its enormous damage and losses to agriculture, and as a source of human infection either directly or through meat and milk, which is claiming the attention of the civilised world. In addition, the cow has three other chief scourges, namely, contagious abortion, Johne's disease and contagious mammitis, the ravages of which are so enormous as to make it necessary to tackle them on a national scale by organised public measures.

In the past, these two domains of veterinary activity—the services in general to the agriculturist, and the services in relation to public health—have been, and still largely are, the work and responsibility of the general practitioner, so that he has a long history of experience, clinical training and administrative capacity behind him. There is one great gap to deplore in this side of his public services, and that is that in this country—much less so in Scotland—with the exception of our great cities, the actual control and inspection of our meat supplies has been allowed to go out of the hands of the veterinary profession into those of semi-skilled laymen.

Another great defect of both the past and the present has been and is, the lack of uniformity and co-ordination of the county and municipal authorities in the administration of the various public health Acts and Orders, and the "permissive" instead of "compulsory" character of those Acts and Orders. I have no hesitation in saying that where there has been failure or lack of full success to effect the purpose of these Orders on a national scale, it has been due to this lack of uniformity of action or to the total neglect of any action by some local authorities who refused to adopt the Acts or carried them out lukewarmly.

Much of the blame for failure, ineffectiveness or other shortcomings which have been laid upon the shoulders of the practitioner in his capacity of part-time inspector, rightly belongs to the shoulders of these local authorities and to the lack of national co-ordination.

Growth of the Public Services

Within comparatively recent times the public veterinary services have grown in importance and scope, and both municipal and county authorities have had placed upon them the responsibility for their organisation, finance and appointment. At present it may be said that the number of bodies concerned in one way or another is indeed formidable and varied. Here is a short list: the Ministry of Agriculture, Ministry of Health, Municipal Councils, Milk Marketing Board, the Agricultural Research Council, the People's League of Health, the National Farmers' Union, the R.S.P.C.A.—and there are several others. Excluding the Ministries and the League, the personnel of these bodies includes hardly a veterinary surgeon, and yet they may be said to be the dictators—the "Mussolinis" and the "Hitlers"—of the domestic economy and the internal polity of the profession.

Their combined or varied voices control and direct its destiny, and, compared with theirs, the voices of the Royal College of Veterinary Surgeons and the National Veterinary Medical Association are "still small voices" indeed. It is small wonder, then, that somewhat chaotic conditions exist, that various interests clash, that different wires are pulled and that the profession itself has so little to do or say as to its own affairs, or as to how they shall be administered or organised.

The N.V.M.A. Scheme

It is smaller wonder still that at last, though very belatedly, there has been born the conception of a "Ministry of Animal Health," having at its head a veterinary surgeon in control of other veterinary surgeons to direct the veterinary public health services.

You will all be familiar with this "Ministry of Animal Health" as being the scheme drawn up by the N.V.M.A., and will be aware that it visualises the co-ordination of all the State, county, municipal and private veterinary personnel into one composite whole working together to national and common ends, and thus realising our motto, "*Vis unita fortior.*"

The Gowland Hopkins Report

The eradication of tuberculosis, the proper use of the tuberculin test, the provision of a full supply of clean and tubercle-free milk and the combating of contagious abortion, mastitis and Johne's disease—these together present a total problem which must be tackled on a national scale. We may well agree that on the technical methods to be employed, the Hopkins Report is a most important and valuable survey of the work to be done, and of *how* it is to be done, but it is when we come to the question of *who* is to do it that practitioners and the N.V.M.A. feel compelled to differ profoundly from the report. As you know, the Hopkins scheme entirely rejects the idea of co-ordinating the present veterinary personnel available, as a whole, and puts forward instead a system of specialised service, leaving out the entire personnel of general practitioners, and proposes to

transfer the whole of the work involved in dealing with the all-embracing programme just sketched to the care of a staff of whole-time veterinary officers.

One thing which has evidently not been given a thought by the members of that committee, only one of whom was a veterinary surgeon—an Army veterinary surgeon—is as to what would be the effect upon the profession as a whole, and upon that general veterinary service which, as I have said, is the first and greatest need of agriculturists, if this enormous field of work was taken from the general practitioner.

We believe that it would destroy the general practitioners economically, and that by narrowing their clinical field it would destroy them scientifically also, producing in course of time a profession characterised by an accentuated specialism on the one hand, and on the other by an emasculated general practice.

We believe that the number of practitioners will be small and their quality inferior: who will either enter general practice or be content to remain in it under such a scheme, to face for a pittance the daily round of hazardous and laborious drudgery which would be the only field left to them? Then, if these things happen, the agriculturist, finally unable and loth to employ both the whole-time officer and the practitioner, even if he remained available, would listen to the voice of the quack, which would again be loudly heard in the land.

The Future

Both schemes spoken of are apparently now at a standstill, and no one knows whether at all, or if so, when, either or any scheme will be implemented by law as a national measure. Meanwhile, the county and borough councils are getting on with the job in hand, and are setting up full or partial whole-time staffs.

In spite of the strong and frequent representations made to the Ministries of Health and of Agriculture, as well as to the County Councils' Association by the N.V.M.A., of the necessity of absorbing the practitioner into the veterinary service, and of the injustice, as well as the disastrous results to agriculture, of his exclusion, the voice of the Association has not so far been listened to, and the spate of whole-time appointments continues.

I am taking it for granted that you are all agreed that veterinary practitioners are fully and indeed eminently fitted as a body to carry out the work of this public service, and are agreed also that whole-time officers should co-ordinate and direct them. You will agree, again, that their exclusion will cause many practices to disappear and a general and serious reduction in income to result in most others. But the county councils, like the Hopkins Committee, appear to be oblivious of, or to disbelieve this, and to hear one voice only, that of the Public Health Service, as though the general needs of agriculture did not exist. Agriculture and the individual farmer stand to lose a great deal if they lose their general practitioner and the serious nature of that loss should be made clearer both to the farmer and to the county councils. Many county councils, blinded by the Hopkins scheme, do not realise as yet the reality and the urgency of this menace to general practice, but many farmers do, and I think the N.V.M.A. and each one of us should redouble our efforts to make it clear to all concerned.

To this end the Society has prepared a letter on the lines suggested by the N.V.M.A. Council and it is urgently hoped that every practitioner will forward his copy to his Member of Parliament, and, if possible, interview him as well.

I am convinced also that once this menace to the survival of the country practitioner is made clear to the Farmers' Union, they will see what they stand to lose, and give effective help to bring the truth home to the county councils. Of the truth of this statement we have concrete evidence recently presented to us.

Largely through the work of this Society, acting in conjunction with the local practitioners, and clinched by the support of the "National," the imminent threat of the enlargement or establishment of complete whole-time services has been averted in Staffordshire and Shropshire. In Bolton work has been restored to practitioners, and in Gloucestershire the Farmers' Union has given its support to the practitioners' cause. In all these cases the local farmers' unions listened with sympathetic understanding to this aspect of the position, and their support and representations to the county councils contributed in no small measure to the results which have followed. We certainly cannot stand still, for once a county is committed to a whole-time service the practitioners' cause may be lost for years or for ever, and the bringing into being of such a scheme as that of the N.V.M.A. will become more difficult and remote—and I am convinced that this is one of the most hopeful avenues of influence still open to us.

The picture one has had to draw of the present position and future prospects of the practitioner in relation to the public services is by no means a rosy one, but with all the emphasis possible I would say, also, that neither is it a hopeless one by any means, despite armchair critics and gloomy pessimists.

Much of the present position in which practitioners find themselves is due to their own deplorable apathy toward their own affairs in the past, and much of that apathy, I fear, persists to-day. But there *is* an awakening, and, given continued enthusiasm and individual

effort, there is every reason to hope that the practitioner will retain his rightful place as the clinician and the field officer in every department of the profession's activities, a position he has held so long, and with so honourable a record of public and private service.

We can all do much to help our own cause by giving our unstinted support to the "National," those of us who are not already members by joining it, and if you want to ensure that the especial interests of general practitioners are fully and constantly voiced within the parent body, then I would say, join this Society which is doing so much to co-ordinate all the practitioner elements within the Council into a united whole.

There is, in my view, also cause for more optimism as to the future than many people think. I believe that after the shock of the Hopkins Report—based upon the one-sided evidence given before that committee—a wide reaction of opinion has arisen, and that it is gaining ground. It is significant that many whole-time officers themselves, a large proportion of the professors of our Colleges, and research workers and many officers of the Ministries, see the necessity and the wisdom of a complete co-ordination of the available personnel—research and laboratory worker, whole-time officer, investigation officer and general practitioner—into one composite whole, if the profession is to wage a successful and national fight against the armageddon of animal scourges.

THE N.V.M.A. QUESTIONNAIRE

I now turn to the second section of the subjects for discussion, the questionnaire which has been sent to every veterinary surgeon on the Register in the United Kingdom.

The origin of the present enquiry, of which the questionnaire is one of the important implements, lies in a resolution sent by this Society to the "National" Council at its meeting on October 1st, 1935. That resolution was as follows:—

> "That this general meeting of the Society of Veterinary Practitioners is of the opinion that the future provision of veterinary surgeons engaged in private practice, in numbers adequate to serve the needs of agriculturists, is being seriously menaced, and the professional and economic position of those now so engaged is being rapidly made untenable by the uneconomic and unnecessary competition of the veterinary officers of local authorities.
>
> "That the Society is of the opinion that these forms of competition cannot be justified as being necessary in the public interest. By such measures as the free or semi-free testing of cattle and the provision of a free or uneconomic service in connection with the Accredited Herds Scheme, financed out of the public rates, practitioners are being deprived of their means of livelihood and their professional activities are being arbitrarily curtailed.
>
> "Moreover, there is evidence of these services being publicly advertised, of unjustifiable interpretations of the various Acts and Orders, and of arbitrary interference with the free choice by agriculturists of their veterinary advisors.
>
> "This meeting is of the opinion that these several matters urgently call for consideration, and respectfully requests the National Veterinary Medical Association to appoint a special Committee to consider them in all their aspects."

This resolution was sent to the Council because at the end of August, 1935, this Society had sent a questionnaire of its own upon one subject, namely, that of "Free or Semi-free Tuberculin Testing," and the losses of income sustained by practitioners in consequence of it. This questionnaire went to all members of the Society, numbering then a little over 300, and the evidence sent in seemed to the Society's Council so important and serious as to suggest a further enquiry amongst all members of the profession and conducted by the N.V.M.A. itself.

It was suggested also that all forms of free or semi-free services, any apparent irregularities in their administration by the local authorities or their officers, whether whole-time or part-time, the losses of income actually sustained or which would be sustained by practitioners by the establishment of full whole-time services, and any other effects upon the profession arising therefrom, should be included in the enquiry.

The Society therefore asked the Council on October 1st last to set up a special committee to make full enquiry into all aspects of these matters. This was unanimously granted and the committee was set up, as you know, and the questionnaire, which is the most important means of obtaining evidence for the committee to weigh and consider, was drafted by its members, and is now in your hands.

I want you to note that this committee of twelve is exactly evenly balanced, there being six practitioners and six other than practitioners, and is representative of various sections of the profession.

The Six Points

The resolution embodies six main contentions, and for the sake of brevity and compactness I shall epitomise them, and, by applying them to the questionnaire, endeavour to make clear the nature and scope of the evidence which is asked for.

Point No. 1.—"That the economic position of general practice is being made untenable by the uneconomic competition of veterinary officers of local authorities and other bodies."

This means that free or semi-free services of one sort or another are so depleting the income

derived from practices as to make it not unlikely that the latter will be abandoned.

It is known, for example, that the City of Birmingham offers and provides the free tuberculin testing of the herds of any approved producers sending milk into Birmingham, some herds being so tested as far away as 45 miles from the city. Similar free or semi-free services are known to exist elsewhere, and clearly, wherever found, evidence of such cases should be sent in.

In Lanarks, Stirling, Dunbarton, Ayrshire, Renfrewshire, Dumfries-shire, Leeds, Surrey, Devon and Herefordshire, it is known that the tuberculin testing of herds for official purposes is carried out at fees ranging from "No charge beyond actual cost of tuberculin used," as in Dunbartonshire, to "one shilling per head of stock inclusive charge," and in several counties a composite fee of one guinea per herd for any number. Here again, further evidence of such services should be sent in, and the fees charged stated.

The Accredited Herds Scheme

As you know, in a number of counties the whole-time services are taking over the whole of this work, which surely should be regarded as purely the clinician's work, and therefore work which the experienced practitioner is best fitted to do.

In a number of counties the clinical examinations are provided either entirely free to the farmer or at quite uneconomic fees.

It is computed that the economic benefit to the farmer from the establishment of an accredited herd amounts to £2 per cow. As practitioners are prepared to carry out the work required at a total charge of two shillings per cow per annum, it may well be asked why the ratepayer, rather than the farmer himself, should pay for this service. Many local authorities issue circulars or other forms of advertising of free or semi-free service under the Accredited Herds Scheme, and this evidence, together with copies of such circulars, should be given under Question 1, Section (*b*) ii, whilst exact figures of income lost go under Question 5, Item (ii). This scheme is only as yet in its infancy, and the actual present losses may well be multiplied several times over in many practices within the next year or two, so that they cannot be taken as an index of the potential losses.

If you have 50 herds now, it may well be 100 a year hence, and it seems necessary, in answering Question 6 (ii) to take this future factor into account.

Questions 5 and 6

These two questions are clearly of the very first importance with regard to what are and will be in the future, the effects upon general practice of the partial or total exclusion of the practitioner from these services, and they should receive the fullest attention. We would earnestly urge all practitioners to answer them fully and frankly under their separate headings, and with scrupulous accuracy and care, giving actual figures either for the latest full year, or giving an average over a series of recent years.

Where all or part of the work under these headings is still retained, the figures required under Question 6 are, of course, those of incomes at present earned under each item of the work. If these two questions are not fully answered by a large proportion of practitioners in the country, it will be difficult, if not impossible, for the committee to draw definite conclusions as to the reality or otherwise of the menace to general practice which is alleged.

Some practitioners have reported losses of work in connection with Johne's disease, but unfortunately this is not provided for under either of these questions. Such evidence, however, can be given under Question 10, which provides for any evidence not specifically asked for elsewhere.

Point No. 2 says "That these forms of competition cannot be justified as being necessary in the public interest."

This may be taken as referring to the provision of free or semi-free tuberculin testing, and to the clinical examinations under the Accredited Herds Scheme. Unless the protection of the public provided by these measures cannot be obtained in any other way than by free services, then, we contend, there is no justification for providing them from the pockets of the ratepayers. In other words, can the farmer afford to pay reasonable fees for the work of clearing his herds of tuberculosis, and enabling him to sell tubercle-free, clean milk at the highest grade prices, or can he not?

That a tubercle-free stock will have a higher market value than an infected one seems obvious, but let us take tubercle-free milk, for on this point there is some very striking evidence which seems to show that the farmer can well afford to pay for such beneficent work.

Mr. John Holroyd, M.R.C.V.S., of Blackburn, giving evidence at Bolton to that Council, made the following statement:—

"Since the milk (S.D.) Order came into force, farmers who supply milk of the high standard required under the Order, can command and do receive a higher price than those who supply non-graded milk. In many districts certified milk is sold at double the price of non-graded milk, but if the producer only charged a penny a pint more for his milk it would, from a herd of twenty average cows, amount to £400 a year. You will therefore see that the producer can well afford to pay a veterinary surgeon's fee for testing, which, although it varies in different localities, will not amount to more than £20, and probably much less, for 20 cows."

These figures are remarkable and illuminating, and I commend them to the notice of this meeting. If they are correct, or even approximately correct, they seem to merit the especial notice of the committee in this enquiry, and through them of the local authorities and the Ministries. If any practitioner can confirm or supplement these figures they can do so in the questionnaire under Question 10.

Point No. 3.—"That there is no adequate justification for paying for these uneconomic services out of the public rates."

This point is largely covered by Point 2, and on the purely economic issue, if what has just been said on Point 2 is true, it is also true here. But the point involves another issue of social and moral if not even of serious legal importance.

In any County or Borough under the regime being considered, veterinary surgeons, resident and taxpayers within them, are contributing to pay for a service given which deprives them of part of their own livelihood, and a service they are trained to, and prepared to provide. This is held to be contrary to the most elementary conception of social justice and usage, and in the absence of a National State Service paid for by the National Exchequer, it seems wrong to establish a virtual monopoly by one section of the profession to the arbitrary exclusion and detriment of another section, and partially at that section's expense.

The principle involved has been recently raised in Glasgow, the case being how far the Corporation of Glasgow had competed, or proposed to compete with its own private traders, and the Court held that "A ratepayer of the city would be entitled to obtain interdict against such use being made of funds raised from the rates." How far the same principle applies to the use of the public rates in these services, and whether it is legal to do so seems worthy of the consideration of the "National" and of its Special Committee, and legal opinion and that of Members of Parliament might be sought.

Point No. 4.—"That the free choice by agriculturists and others of their Veterinary advisers is being denied to them, and the professional activities of practitioners are being arbitrarily curtailed."

In many counties in Scotland, of which Lanarks and Dumfriesshire may be given as examples, the practitioner is not allowed to do the testing of licenced herds, and his certificate is not accepted for licensing purposes, whilst producers have been threatened with prosecution should they offer milk for sale as graded milk from a herd certified by a private practitioner. Evidence of such interference with private practice anywhere, should be given in answer to Question 1, Section (d).

The other form of arbitrary curtailment of the practitioner's activities comes, of course, from the widespread practice of providing services for nothing, or at fees with which it is impossible for the practitioner to compete.

Point No. 5.—"That these forms of services are being publicly advertised."

The subject of advertising in any form is of the greatest importance in this enquiry, and evidence upon it, accompanied in all cases where possible by actual copies or cuttings from the Press, should be sent in answer to Question 1 under Sections (a) and (b). Circulars such as those issued by Birmingham Corporation *re* tuberculin testing already mentioned, circulars or notices in the Press and agricultural journals by County and Borough Councils or others, quoting prices for doing professional work of *any kind*, should be sent in with actual examples. The practice of the local authorities approaching producers by circular or other means, offering to test their herds, is widespread in Scotland, and wherever else it is met with such evidence should be given to the Committee. In other cases the publicity takes the form of general announcements in the farmers' journals, and by way of illustration the following may be cited:

In the *Home Farmer*, the official organ of the Milk Marketing Board for April, 1935 (page 11), the following paragraph appeared: "In Derbyshire the pre-license Veterinary Test is at the producers' expense. If undertaken by the County Council Veterinary Surgeon the charge will be £1 1s. 0d. for herds up to 25 cows and then 6d. per cow. Quarterly inspections gratis."

"Sweet are the uses of Advertisement," and they may take varied and subtle forms, examples of any of which, when known, should be placed at the disposal of the Committee.

The Ethical Aspects of Advertising

This matter of advertising by local authorities raises questions of grave importance which would seem to call for the judicial consideration of the Council of our Royal College, and the opportunity of presenting it may now occur.

One matter to be decided is, whether an advertisement of any kind by a local authority or any other body, offering the professional services of its veterinary officers to the public, is "advertising" by those officers as individuals, or are they "covered" in the disciplinary sense, and so protected from the consequences which would follow to the private veterinary surgeon should he *do the same thing*. For an individual veterinary surgeon to issue any form of advertisement, or to offer any inducement for employment to the public by any means whatsoever, is a grave breach of his professional code, which, when proved, may be visited with exemplary disciplinary action. The ethical position of those veterinary surgeons carrying out services so *advertised by proxy*, seems

urgently to call for an authoritative pronouncement by the Royal College, and to require examination by the National Association during this enquiry. The Council of the Royal College severely deprecates its members applying for work or "appointments open to tender as being opposed to the public interest, derogatory to the dignity of the profession," and destructive of its claim to be a professional body, yet many of these advertisements complained of, appear to be in the nature of "issued tenders." It would seem also that the N.V.M.A. has a responsibility in this direction.

The Association has done much to raise the status of the whole-time service in many ways, and does not permit its members to apply for or accept posts offered at salaries below a minimum approved by it.

It is sincerely to be hoped that such measures of advertised competition may be found amenable to disciplinary control by the Royal College, or capable of some other equitable solution. If this is not achieved, it would then seem necessary for the Association to reconsider the position, either with a view to prohibiting its members applying for posts so administered, or by withdrawing its support of a standard of salaries for such appointments, as being degraded to the level of commercial engagements, advertised as such.

Point No. 6.—"That interpretations are being placed upon the various Acts and Orders by local authorities which are not justified by the Acts themselves, and which re-act detrimentally upon general practitioners."

In the Milk (S.D.) Orders the term "herd" is defined as meaning "cows in milk and any bovines in contact."

There is ample evidence to show that in Scotland local authorities now instruct their officers to interpret it as including heifers and other animals, neither in milk nor in contact with milch cows, or even on the same farm, so long as they belong to the same owner. One result of this is, that practitioners in these areas have lost the preliminary testing, and the testing of young and non-contact animals. A protest against this procedure and against the refusal to accept private practitioners as approved to carry out testing for official purposes, was sent last year to the Lanarks Council by the N.V.M.A., but that body replied that they had "decided not to depart from their present procedure" and refused to receive a deputation. If similar procedures or other misinterpretations in respect of orders are encountered in any areas, they should be reported under Question 2 as to the interpretation of the order, and Question 1, sub-section (d), as to refusal to accept certificates.

Some Apparent Irregularities

Under this heading come any actions by either part-time or whole-time officers which appear to violate the ethical code applicable to us all, such as are instanced in "Question 3." In my view, Question 3 might have made it clearer that it applies with equal force to part-time as to whole-time officers. I understand, at any rate, that many of our whole-time colleagues have misunderstood this question as being directed wholly against them, which is a great pity.

I suggest the question should read: "Have you met with instances of veterinary surgeons who hold official appointments *whether as part-time or whole-time officers*," etc.—and should be answered in that sense.

May I at once say with the fullest emphasis that this Society, and I trust practitioners in general, have no quarrel with their whole-time colleagues as a body, but rather and almost wholly with the system and the administration under which they work, a system which they are bound to carry out, and which cannot fail to lead to friction and to serious interference with general practice.

My personal view is that any whole-time officer who accepts the central principle of the N.V.M.A. Scheme, which visualises him working in co-operation and co-ordination with the general practitioner, is quite eligible to become a member of this Society, and on the other hand, that any general practitioner who does not agree to work in co-operation and co-ordination, is not a true member of this Society, or in accord with its policy and its spirit. That, to my mind, is the "acid test" and its full acceptance by both sections should lead to their lasting fusion into a harmonious whole.

In conclusion, I must apologise for the length and many other faults of this address, which, long though it is, leaves much ground which I trust will be covered in the discussion. I need hardly add, that it would be difficult to overestimate the importance of such a comprehensive enquiry as this to the profession as a whole, and I trust it will be responded to by all its sections with a full sense of its import, and of their responsibilities to their fellows. Upon practitioners there rests a very special responsibility, for it has come into being on their initiative and at their request, and failure from apathy or diffidence on their part to provide any evidence they can produce in support of the grievances and the menace to their future which they allege to exist, will be disastrous to the future of their cause.

The desire of all should be for *the exact facts, all the facts and nothing but the facts*, bearing ever in mind that we belong to one corporate body, and that its future as the servant of agriculture and of the public can only be fully and worthily achieved when all its elements find conditions for working together in perfect co-ordination and co-operation, and in the spirit of compromise and goodwill.

Vote of Thanks.—At the conclusion of the address, Mr. Spicer rose to say that he would like to propose a very hearty vote of thanks to Mr. Edwards for the masterly address he had given them. He thought that Mr. Edwards had covered the ground most thoroughly and that it must have taken him a very long time to get all those facts together.

The vote was accorded with acclamation, Mr. Edwards making suitable acknowledgment.

General Discussion

The Chairman now observed that the questionnaire and Mr. Edwards' paper relative thereto, were open for discussion. It was suggested, in regard to the former, that they should go through the questionnaire question by question.

The Hon. Secretary here intimated that any who had already completed their answers to the questionnaire and sent it in could, if any further evidence occurred to them, be provided with further copies and send up additional evidence. The main business of that meeting (proceeded Mr. Steele Bodger) was to try and elucidate the questionnaire and any difficulties or uncertainties that arose could be voiced and dealt with.

Concerning *Question* 1, inviting information concerning instances of a number of practices (specified),

Mr. Reid enquired as to the position of a veterinary official who, when lecturing to a local agricultural society, offered a free blood test every month until the herd was free from abortion.

The Hon. Secretary replied that such evidence as that would come in under Question 1 (*a*) (i)—State or local authorities.

Mr. Reid added that he was present at the lecture and heard the offer made: further than that, the tests were carried out.

The Hon. Secretary said that he could not emphasise too strongly the desirability of being able to substantiate fully all the facts that might be stated in the evidence they supplied.

Lieut.-Colonel Greenfield asked if under this heading there should come the circular issued by some county councils, in which they laid down a prescribed number of veterinary surgeons in the county—not by any manner of means a large number—who were permitted to do testing of herds for the production of Grade "A" milk, to the exclusion of many other practitioners.

The Hon. Secretary commented that evidence of that nature was just what they wanted to secure.

Lieut.-Colonel Greenfield, proceeding, observed that that was a very vital matter to many practitioners, certainly in his area: it was of great moment that there should not be the advertisement of certain men only by the county council in this manner.

The Hon. Secretary said that, replying to the specific question, he thought that that came under Section (*b*) (ii)—professional work arising under the "accredited" herds scheme. In regard to (*b*) (iii)—work under the "attested" herds scheme—it was known that the Ministry of Agriculture's veterinary officers have been instructed by the Ministry of Agriculture to visit the producers of Grade "A" and Grade "A" (T.T.) milk with a view to inducing the owners of such herds to have their herds attested. He had details, but should be glad of further evidence. In fairness to them it should be stated that certain veterinary officers of the Ministry had objected to having to go and do that.

Mr. Reid, speaking to Section (*b*) (iv), said that he felt sorry for these whole-time men who were really nice fellows placed in a most unfortunate position. If such a veterinary officer received instructions to go to a county council institution to test a herd for tuberculosis or for contagious abortion—work that had previously been done by him (the speaker)—what course was open to him but to go and do it?

Dr. McCunn commented that on a county council farm they could do what they liked, but Mr. Reid added: "They certainly were my private clients."

Dr. McCunn, proceeding, said that if the county council owned a farm and a herd it would certainly be a very difficult matter indeed to stop them sending whom they liked.

Mr. Reid said that he had a contract with the institution to do the testing and general farm work and he found the county council's veterinary officer testing a newly-purchased bull. He wrote to the chief about it, and that gentleman said that he would let him know, but he had not heard any more from him.

Captain Stow said that following on the experience recounted by Mr. Reid he tested one county council herd; they were buying in a lot of cattle, and he tested the animals as they brought them in. Since they had been brought in, however, they had been tested twice by the county council's own veterinary officer. He did not see that he (Captain Stow) could do anything if the county council felt that they would rather have their own veterinary officer to do the testing, but at the same time it had made a great deal of difference in his work. The county councils, however, were the masters.

Mr. Reid observed that Captain Stow could do what he himself had done—tell the county council's veterinary officer that if he was going to come with his collar on he could also come when it was necessary for him to take his shirt

off, and do the rough as well as the smooth work.

The Chairman, commenting on paragraph (c) relative to the issue by local authorities or other bodies offering services or issuing circulars or other announcements which were calculated to lead the recipients to believe that such services could only be obtained through these authorities or bodies, said that they even had eminent members coming out from the Royal Veterinary College and lecturing to the branches of the National Farmers' Union, and further, they did work with herds of cows in connection with the elimination of contagious abortion. He thought he could say, without any breach of confidence, that in the paper they sent out to the owners of such herds it was stated that any intelligent farm servant was capable of taking blood samples either from the jugular or from the ear. That, to come from their *alma mater* to the general public, made his blood boil. (Hear, hear.)

Mr. Spicer said that they had also to bear in mind what was happening under the Investigation Officers' Scheme in connection with the control of contagious abortion. In his district one of the men working under that scheme went round to a large number of farmers and did all the work free. That individual told the farm bailiffs and hands to take the blood samples themselves; he supplied them with the bottles and instructed them how to do it.

The Hon. Secretary reminded the meeting that under the new rules governing the work of Investigation Officers which were agreed upon between the N.V.M.A. and the Ministry of Agriculture, in 1935, that was not the kind of work which was required of Veterinary Investigation Officers.

A Member said that he could substantiate the statement made by Mr. Spicer, for as recently as May of last year his senior partner and himself were called in to give advice and test a herd where there was going to be a legal dispute. The man had taken over a farm where contagious abortion was rife and he, being an old Wye College student, had taken his own blood samples and sent them up to that institution, where the requisite examination was carried out for a fee of a shilling a time. In his view, where, in such cases there was collaboration between a veterinary surgeon and a layman the matter would come within the purview of the Royal College of Veterinary Surgeons.

Passing to the consideration of Section (d)—Refusal to accept the certificates of a practitioner in respect of herds tendered for registration under the Milk (Special Designations) Orders, and the "Accredited" Herd Scheme—Mr. Dier said that he could give an instance of a herd under his control, the owner of which desired to come into the "Accredited" Herd Scheme. He (Mr. Dier) issued certificates for him, when he received a letter saying that unless he was still employed, under the Milk and Dairies Order, for East Sussex those certificates could not be accepted. He had acted for that man for forty years as veterinary surgeon.

Dr. McCunn here stated that he desired to revert for a moment to (a) (ii)—Animal Welfare Societies which employ unqualified persons for the giving of advice or treatment. He would like to ask "why only if they employ unqualified persons?" He could tell them that to hundreds of veterinary surgeons in this country the existence of those Animal Welfare Societies was becoming a most serious thing. Veterinary surgeons were asked to give their names to those Societies, but the surgeon could not be there all the time and of necessity a good deal of the work must be done by unqualified people. In his opinion, therefore, if they had evidence of malpractice on the part of Animal Welfare Societies, even if they did employ qualified persons, they should be entitled to put that down as well.

Similarly, with regard to the activities of Veterinary Investigation Officers, any evidence of malpractice should be included. They were doing their work free and that meant that so much less money was coming to the veterinary profession. He would give them one instance of such encroachment on the part of a municipal veterinary surgeon, whose municipal body had three farms and he took over the work there for no more remuneration, while the only expenses allowed were 'bus and tram fares. A veterinary surgeon approached him about this, saying that in consequence of this new arrangement, in place of regular attendance he was now required to attend only during the night time; the other fellow was doing all the work during the day.

Mr. Edwards commented that in regard to the latter part of Dr. McCunn's remarks he should like to call their attention to the revised regulations formulated by the Ministry of Agriculture. Under these rules, no Veterinary Investigation Officer could go on to a farm and take up a case of any nature except in collaboration with the veterinary surgeon in that area. Moreover, the Veterinary Investigation Officer could not go on to a farm unless he first wrote or got into touch with the private practitioner and made a mutual arrangement as to the time and place at which they should meet. Further, the farmer must inform the private practitioner that he wanted to obtain the services of the Investigation Officer and they must go together.

Question 2.—Evidence of misinterpretation of Public Health Acts or Orders relating to diseases of animals or meat and milk inspection.

The only observation in regard to this question was passed by the Hon. Secretary concerning the definition of what constituted a herd.

Mr. Steele Bodger said that in this connection "herd" was expressly meant to infer animals in contact and not animals on another farm.

Question 3.—Evidence regarding the giving by veterinary surgeons who hold veterinary appointments of professional service, prescriptions or advice to clients in matters or cases other than those concerned with their official duties.

The Hon. Secretary said that this question was of considerably greater importance. They had had a lot of evidence of that already that evening. He would like to stress the fact that that question referred as much to part-time veterinary inspectors as it did to whole-time veterinary inspectors.

The Chairman said that the members who had spoken to this matter and any others who had evidence doubtless would furnish such details as were in their possession.

Question 4.—Relative to the free services often granted by general practitioners in respect of sick animals of the poor, and in other ways.

The Chairman commented that it was in that section that Professor McCunn's evidence should be put.

Proceeding, Mr. Elmes expressed the view that practitioners throughout the country might interest themselves more than they had yet done in the question of the provision of free services for the sick animals of poor persons. For example, where the R.S.P.C.A. were active in this matter it was most important that practitioners in the town should try and get on to the local committee. In his own town there was such a scheme; he was on the committee and they developed a scheme on the cheapest lines possible. It was advertised and people had a choice of three veterinary surgeons. As the patients were seen on the veterinary surgeons' own premises there was no expense of a central room to meet. The scheme was increasing very largely in its scope and he believed was doing very excellent work.

A Member enquired whether, in the light of that question, they were committing a breach of professional etiquette in treating free of charge or at a very reduced fee such a case as that of the dog brought by a farm labourer or some other cottager in one's practice.

Professor McCunn replied that that question was put in to refute the statement of various societies that a poor person could not get free treatment or treatment at greatly reduced fees from a veterinary surgeon.

The Chairman said that the scheme operative in his town was one that he himself had put forward in consultation with his fellow practitioners. They made a small charge, to cover expenses, and to this the R.S.P.C.A. agreed. They had little books of forms, whereon provision was made for the inclusion of the name of the owner, date of attendance and the nature of the disease, so that the committee could have all the information they required. He told the committee that unless they could trust them (the veterinary surgeons) the scheme was finished so far as he and his fellow practitioners in the town were concerned. The result was, however, that the local committee were not only satisfied but delighted with the progress of the scheme. It must be remembered, however, that such schemes called for some self-sacrifice on their part, but if they put their heart into the operation of these agencies for affording poor people the advantage of qualified aid for their animals, those poor people's dispensaries, concerning the deplorable activities of which they heard so much, would die a natural death. (Hear, hear.)

Question 5.—In regard to this question, which concerned diminution of income sustained from loss of work in connection with tuberculin testing, clinical examination of herds, etc., Mr. Dier observed that it would be more helpful to the committee if they could know whether or not mileage was included.

The Hon. Secretary replied that in every instance where mileage was included the fact should be stated.

Proceeding, Mr. Steele Bodger said that they wanted to pay a great deal of attention to that question, giving the fullest possible details under that heading.

Question 6.—Estimate of loss of income.

The Chairman commented that this was a very easy question to answer; they had only to look up their last year's bills. It should be remembered that all the evidence was given in confidence.

Mr. Edwards observed that it was best to give the average over recent years, but in reply to Dr. McCunn, added that it need not be confined to recent years. (Question put because some men "have lost all their income on this work in recent years.").

The Hon. Secretary said that in connection with the Accredited Herd Scheme the loss would have to be prophetic because though one only had perhaps 20 of these herds last year and 40 this year, next year and the year after one might easily have two or three times that number as the scheme was still in its infancy.

Question 7.—Deprivation of areas of the services of general practitioners in consequence of the economic losses from the growth of the whole-time veterinary services.

The Chairman commented that no doubt there would be some answers to that question; all had heard of several practices having been closed down from this cause.

Question 8 being addressed to whole-time officers, the meeting passed to the consideration of *Question* 9 relative to the N.V.M.A. scheme for carrying out the recommendations of the Economic Advisory Council's Committee on Cattle Diseases (as published in *The Veterinary Record* of February 2nd, 1935).

The Hon. Secretary said that this scheme had been printed separately and copies could be obtained from the Secretary of the N.V.M.A. They should give that question mature consideration; the idea behind it was to see whether there was unanimity amongst general practitioners on the point of their being willing to serve under the general direction of the whole-time veterinary officer as provided in the N.V.M.A. scheme.

Question 10.—Discussion on this request for any other information relevant to the enquiry was opened by Mr. Andrew, who said that the suggestion that the whole-time man should do the testing was going to influence a good many farmers in his favour, if he was allowed to do it, for no private practitioner could compete with him on financial grounds. He did not think that the charge of one shilling per animal which was now offered in some such cases was a fair one. The majority of the farmers could afford the fee charged by their own veterinary surgeon and would be willing to employ their own practitioner.

The Hon. Secretary said that he would like to take that opportunity of uttering a timely warning against high charges for testing; in fact, that might be termed the deciding factor in the issue, because if the fee was too high quite obviously that work would go to the whole-time man. As to the amount of the fee which the private practitioner might charge, for his part he thought 3s. 6d., or even 3s., per head a fair fee where herds numbered from 30 to 40 animals. If one got plenty of such herds that was a very remunerative charge—it included mileage and was, in fact, an "all in" charge. It was the same thing for work carried out under the Tuberculosis Order. He thought that to charge a fee of 10s. 6d. a cow for examining it, with mileage extra, so that it took perhaps £5 or £6 to get rid of a tuberculous animal, the salvage value of which was perhaps 5s., was the very thing that was making for whole-time staffs. He thought that all would agree that ultimately there would have to be a "*per capita*" fee charged for all work carried out under the Diseases of Animals Acts and Orders and the Milk and Dairies Acts and Orders—other than routine herd inspections; by this he meant that either the State or local authority should pay the practitioner say 1s. per cow per annum, or whatever fee was agreed upon, and for this fee the practitioner would carry out any work necessary under the said Acts and Orders. He thought that would be the only solution to their problem in the long run.

Mr. Spicer expressed the view that they made a great mistake when they charged too high a fee, and the Hon. Secretary added that so long as the matter was wholly a commercial one he would charge a low fee.

A Member raised the question of blood testing for contagious abortion, stating that they had here two distinct procedures. They could either take the blood samples themselves and charge a fee for that and for packing and postage in forwarding to a laboratory, or they could use the abortoscope test.

Mr. Spicer said that there was a number of people who carried out the blood test for a fee of 1s., whereas the laboratories charged 3s. 6d. if one got the titres. That was going to make a big difference to the price one could charge the owner.

Mr. Craft asked if they were to go on allowing the layman to go on doing their work. He thought it was very nearly time that a stop was put to this practice carried on by agricultural institutes who accepted those samples sent in by laymen.

Mr. Edwards said that it should be pointed out that these men, if they were Veterinary Investigation Officers, were breaking the rules laid down by the Ministry of Agriculture, therefore such an officer who was carrying out a practice of that sort was guilty of a breach, not only of etiquette, but of his own rules.

Dr. McCunn said that so far as the Royal Veterinary College staff was concerned, on the side on which he worked, they were absolutely precluded from going out unless they did so at the request of a veterinary surgeon. The only exception was this: in the old Charter there was a rule whereby a subscriber could call upon a professor from the College to visit his place, but only with a view to his animal being removed to the College. If they did go out, they were bound to collaborate with the veterinary surgeon, *i.e.*, the veterinary surgeon had to call them. He could instance them another rule of the College, however, whereby the research people could collaborate with a farmer and his cowman.

The Hon. Secretary said that what they were concerned with here and now was this, that the N.V.M.A. had received an undertaking from the Ministry of Agriculture in regard to the activities of those Veterinary Investigation Officers. That concerned the N.V.M.A. and that body, the Society of Veterinary Practitioners: it did not concern the R.C.V.S. unless they were making a specific personal complaint about a member. Those practices in themselves, however, did concern the N.V.M.A. and complaints

concerning them should be sent to the Secretary.

Mr. Edwards commented that the revised rules were quite sufficient to include all the instances that had been given them that evening.

The Hon. Secretary informed the meeting that the N.V.M.A. had been successful in securing about 99·5 per cent. of the points that they had raised with the Ministry of Agriculture in that connection. In fact, it might be said that the Ministry were willing to concede practically every point that the Association put to them. He would urge any of them who had knowledge that these regulations were not being adhered to to get into touch with the "National" in the matter, because the Ministry of Agriculture were most anxious that there should be strict conformity with these rules.

Dr. McCunn: "Might I suggest, Sir, that in future, even if there have been difficulties in the past, you will collaborate?" (Hear, hear.) "If the word gets abroad that so and so will not collaborate, you are going to defeat the whole object of these regulations."

Mr. Edwards said that such an unfortunate eventuality was provided for in the new regulations, in which it was stated that if practitioners were not prepared to collaborate with the Veterinary Investigation Officer the latter was free to conduct the investigation by himself.

A Member took the Hon. Secretary to task for the phrase which occurred in a letter appearing in the current issue of *The Veterinary Record* and which was as follows: "Supervision is good for all of us." Could the Hon. Secretary, he asked, enlighten the meeting as to what supervision he envisaged might come into play?

The Hon. Secretary replied that he thought his questioner was mistaking his use of the term "supervision." In the Ministry of Agriculture they had veterinary officers and superintendent officers and if they were going to get collaboration in the veterinary services of this country, as these were envisaged in the N.V.M.A. scheme, they were bound to have somebody who was responsible for the action of independent units within those services. Moreover, county veterinary officers themselves required supervision by a supervising officer. Supervision was essential if there were to be any measure of co-ordination, but supervision did not mean domination; it meant co-operation and co-ordination.

At this stage Mr. Reid asked if some resolution could go from that meeting to each chief veterinary officer, expressing the willingness of the practitioners to co-operate with the whole-time veterinary officers. The meeting heartily endorsed the proposal and without further discussion the following resolutions were passed:—

(1) "That a letter be sent to the chief veterinary officer in each county having appointed such an officer, expressing the willingness of all the practitioners in that county to co-operate with, and work under the supervision of, the whole-time veterinary officer in the area."

(2) "That the foregoing resolution be forwarded to the other regional meetings of the Society to be held during the present month, in order that it may be examined thereat and the approved or amended drafts be returned to the Hon. Secretary prior to forwarding the agreed resolution to the N.V.M.A."

It was also decided that Resolution No. 1 be sent regionally to county councils in areas where it is approved in its present form.

Before the meeting closed, Lieut.-Colonel Greenfield rose to say that it seemed to him that one great bugbear of our profession was the encroachment by one veterinary surgeon upon the area of another in consequence of appointments to carry out milk legislation and work under the Diseases of Animals Acts. He therefore hoped that from that meeting a letter would be sent to the Council of the N.V.M.A. conveying the suggestion that when local authorities were making part-time appointments for this work they should be placed in possession of the names of all the veterinary surgeons in the area who were available for the purpose and to enable this to be done the N.V.M.A. should inform those local authorities that such lists were available to them on application.

The Hon. Secretary said that he would make a note of the point.

Proceeding, Mr. Steele Bodger said that together with the questionnaire members would have received a letter from the Secretary of the N.V.M.A. transmitting the suggestion that a letter should be addressed by members seeking to enlist the support of their local Member of Parliament. A "model" letter had been drawn up for that purpose, and he had a supply of them with him if any of those present would like to take copies.

Vote of Thanks to the Chairman.—Dr. McCunn said that before the meeting disbanded he was sure it would be their wish that they should record a hearty vote of thanks to their Chairman, who had presided most ably over their deliberations that evening—so well, indeed, that he thought Mr. Elmes might well be made permanent Chairman of their meetings. (Hear, hear.)

The vote of thanks was carried with acclamation and the Chairman, in acknowledging the compliment, took the opportunity to express the hope that all those gentlemen who were standing as candidates in the forthcoming election to Council, R.C.V.S., would favour the

profession with an election address so that their colleagues might know where they stood in various matters of vital importance now before the profession.

"We are a small profession," continued Mr. Elmes, "and we have no voice in Parliament, but we are strong enough now to be represented in the House of Commons, and I, for my part, would not vote for any man unless he was prepared to try and get a member of our profession into Parliament. I do not think that a 'lobbier' or Parliamentary agent is anything like sufficient for our requirements in this regard. A member of our profession is certainly needed in Parliament to look after our interests and to guide other Members of Parliament who at present know little or nothing about our work and its importance to the agricultural and general community. If there were to be a levy of only sixpence per head of the members of the profession, that would come to something like £600 and with his salary of £400 a year our Member of Parliament would be a thousand a year man and we should have someone there who would voice our views, safeguard our interests and perhaps do much to ensure that many of the legal anomalies under which we work may be removed."

The meeting greeted the Chairman's observations with applause, which was renewed when, as the final item of business, the Hon. Secretary announced that the membership of the Society now totalled 351.

H. W. Steele Bodger, *Hon. Secretary.*

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NORTH OF ENGLAND V.M.A.*

MEETING AT SHIRE HALL, DURHAM

The meeting held on December 7th, 1935, consisted of a demonstration of the double intradermal tuberculin test, applied to young stock, at Mr. W. Morris's Harraton Hall Farm, Birtley. A detailed discussion of the technique of the test, and the interpretation of the results took place, and Mr. Morris was cordially thanked for his courtesy in placing his young stock at the disposal of the Association. The demonstration was followed by the business meeting, held at the residence of Mr. and Mrs. H. Birkett Allan, where members and their ladies were entertained to tea, the ladies having held a meeting during the afternoon to discuss their arrangements for the annual effort on behalf of the Victoria Veterinary Benevolent Fund.

At the outset Mr. and Mrs. Allan were warmly thanked by the President, on behalf of the members, and a formal vote of thanks for their hospitality was carried with acclamation.

*Received for publication March 17th.

The chair was occupied by the President, Mr. J. R. Rider, and the attendance book was signed by the following: Messrs. H. B. Allan, T. Wilkinson, E. R. Callender, J. W. Rider, T. M. Mitchell, C. G. Hill, G. M. G. Oliver, C. Nicholson, E. F. Hardwick, J. Smith, T. R. Jarvie, T. Johnston, G. Atkinson. Major R. E. Bond, R.A.V.C., was present as a visitor. Apologies for absence were received from Dr. Bradley, Sir F. Hobday, Messrs. H. S. Elphick, W. A. Doughty and others.

The minutes of the preceding meeting, having been published in *The Veterinary Record*, were taken as read and approved.

Correspondence.—A letter was received from Mr. C. Elphick, tendering his resignation. After some discussion it was decided to ask Mr. Elphick to reconsider his decision.

Election of New Member.—Mr. F. J. L. Croudace was elected, on the proposal of the President seconded by Mr. Callender.

Report of Council Meeting.—The report dealt with various matters of a domestic nature, and subject to the decision that one paragraph dealing with the Rules be referred back for further consideration, it was received and adopted.

Reports by Delegates to Outside Bodies

Newcastle R.S.P.C.A. Clinic.—In the absence of Mr. H. S. Elphick this report was read by the Hon. Secretary, as follows:

"I beg to submit return of attendances at the clinic for the period December 1st, 1934, to November 30th, 1935.

Dogs, 1,733; cats, 311; cage birds, 7; pigeons, 3; ponies, 16; other animals, 5; fowls, 4. Total, 2,079, and 194 cases seen at surgery, 2,253.

"The operations performed were the usual tumours, fractured legs, herniæ, enucleation of the eyeball, hysterectomy, etc. Animals destroyed as hopeless cases: dogs, 31; cats, 36.

Finance

"*Income*	£	s.	d.
Donations	63	15	5
Collecting box	24	13	9
	£88	9	2

"*Expenditure*	£	s.	d.
Drugs, veterinary surgeons' fees, lighting, heating, cleaning, repairs, etc.	71	8	11"

The report was received and adopted.

Sunderland R.S.P.C.A. Clinic.—An account of the year's work was given by Mr. T. M. Mitchell, who referred to what he termed "luxury" operations, giving the castration of cats as an example. He said he did not think such operations were covered by the principle underlying the working of clinics, and they had declined to perform such operations as a free service. In the discussion which followed it was suggested that this subject should be

examined by the Council, and its findings reported to the general meeting.

Middlesbrough R.S.P.C.A. Clinic.—In the unavoidable absence of Mr. Starkey it was not possible to present an account of the work done during the year. It was understood, however, that steady progress was being made.

Alan Duke of Northumberland Memorial Fund.—In presenting this report, Mr. W. Lyle Stewart referred to the scheme, recently inaugurated, for the supply of certain sheep biological products through veterinary surgeons, and reminded members that it was hoped the scheme would develop and expand, to the mutual benefit of the sheep farmer, and the veterinary surgeon.

N.V.M.A.—The Hon. Secretary gave a brief account of the work of the "National" during the year.

Election of Officers

The following nominations, submitted by the Council, were unanimously adopted:

President.—Mr. W. Lyle Stewart.

Senior Vice-President.—Mr. J. R. Rider.

Junior Vice-President..—Mr. J. J. McDowall.

Hon. Secretary and Treasurer.—Mr. J. R. Rider.

Hon. Auditors.—Messrs. T. M. Mitchell and E. R. Callender.

Two members of Council.—Nominations were received from the meeting, and after a ballot Messrs. H. B. Allan, and T. Wilkinson were declared elected.

Any Other Business.—Reference was made to the serious illness of Mr. Barker, and Mrs. Starkey. The meeting expressed its sincere sympathy with the sufferers and relatives, and the Secretary was asked to convey the wishes of the members for a speedy recovery in each case.

J. R. Rider, *Hon. Secretary.*

In Parliament

Nutritional Problems Discussed by the Lords

In the House of Lords on March 18th, the Bishop of Winchester urged the Government to extend the provision of liquid milk to school children and to initiate a scheme on similar lines for expectant and nursing mothers and for children under five. He gratefully acknowledged the recent improvement in the standard of nutrition, but adduced evidence to show that underfeeding is still too widely prevalent. He repeated the question which had been put by *The Times* —Why should not some of the milk now poured into factories be poured down children's throats?

Lord Strabolgi expressed the Labour Party's support of these suggestions, with which the House as a whole sympathised. Lord Radnor, however, argued that milk was not the only food that agriculture could provide to improve the health of the nation, and he suggested that a Minister should be allotted the duty of co-ordinating the interests concerned in the problem of nutrition.

Lord Astor insisted that the price of milk was the crux of the problem and that unless the price was reduced the sympathy of the heavily-burdened taxpayer would be alienated.

Lord Gage, replying for the Government, admitted that there was room for improvement in nutrition, but pointed out that the British standard of living was high compared with the standards of other countries. The marriage of health and agriculture was a commendable ideal, but if the lower food prices were to be a condition the marriage might be one of convenience to health but less desirable to agriculture. The Government were alive to the supreme importance of nutrition, to which milk was of the highest importance, but they were not prepared to advance new schemes until investigations now in progress were completed.

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The following questions and answers have been recorded in the House of Commons recently:—

Bovine Tuberculosis (Spahlinger Treatment)

Sir F. Fremantle asked the Minister of Agriculture whether adequate experiments are being made in this country to check those in Northern Ireland on the Spahlinger vaccine for the prevention of tuberculosis in cattle; how long these experiments will take; and whether, if it be proved successful, he will take steps to secure its general adoption?

Mr. Elliot: I am in close touch with the work that has been and is being carried out in Northern Ireland in connection with the Spahlinger vaccine. The question of conducting tests with the vaccine in this country is under consideration. I am, however, not yet in a position to make a statement as to the scope or duration of any experimental work which may be undertaken.

. . . . . .

Milk Designations

Mr. Porritt asked the Minister of Health whether he can now make any further statement as to the present position of the discussions affecting the suggested alteration of milk designations?

Sir K. Wood: I regret that I am not yet in a position to make a final statement on this subject.

Mr. Porritt asked the Minister of Health whether there is a uniform standard of qualification throughout the country in respect of granting Grade "A" licences; and, if so, whether there is any special reason why the proportion of accredited producers should vary so much in different counties?

Sir K. Wood: The prescribed conditions for Grade "A" producers' licences are the same throughout the country. I am not aware of any reason why the proportion of accredited producers should vary substantially between different counties, and if my hon. Friend has any reason to suppose that some authorities are not adopting suitable standards in the granting of licences and will give me the necessary particulars, I shall be happy to make inquiries.

Mr. Porritt: Is it a fact that in some counties the medical officers of health grant licences and in others the sanitary officers?

Sir K. Wood: If my hon. Friend has any information to give me I shall be glad to have it.

Mr. Alexander: Is the right hon. Gentleman aware that the accredited producers procedure is not dependent on Grade "A"?

Milk Marketing Scheme

Major Mills asked the Minister of Agriculture how many cows were examined in each of the Milk Marketing Board regions of England and Wales each month in 1935 under the accredited scheme so as to qualify for the 1d. a gallon bonus and how many qualified; what was the approximate estimate of the total number of cows in each of the above areas in those months; and what percentage, in terms of gallonage, accredited milk presents to the total output for each region during each month of the accredited scheme as above?

Mr. Elliot: I regret that the information asked for in the first and second parts of the question is not available. From information supplied by the Milk Marketing Board it is, however, possible to give, for each region under the Milk Marketing Scheme, particulars of the number and proportion of producers who have been accredited during the past year, and the percentage of accredited milk to the total gallonage sold. These particulars are set out in the following statements:—

Draught Horses (Import)

Major Carver asked the Minister of Agriculture whether his attention has been called to the steady increase during recent years in the number of draught horses imported into this country; and whether, in view of the damaging effect that such imports have upon the maintenance of British horse-breeding, he can state whether recommendations will be made by him for the removal of horses from the free list of the Import Duties Act?

Mr. Elliot: The answer to the first part of the question is in the affirmative. As my hon. and gallant Friend is aware, representations on the subject of duties should be submitted to the Import Duties Advisory Committee in accordance with the provisions of the Import Duties Act, 1932.

Table I.

Number of Producers Accredited per Region at end of each Month, May, 1935—January, 1936.

Region.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	No. of Registered Producers.*
1. Northern	132	257	361	426	468	526	589	642	15,418
2. North Western	843	1,601	2,235	2,771	3,216	3,850	4,494	4,778	37,214
3. Eastern	370	639	773	849	915	992	1,069	1,118	11,739
4. East Midland	253	493	632	714	789	890	1,013	1,081	11,647
5. West Midland	146	409	593	715	771	874	938	1,000	14,028
6. North Wales	204	358	432	472	498	553	584	606	6,765
7. South Wales	43	148	248	283	311	343	428	452	10,641
8. Southern	199	387	483	544	615	696	789	889	8,711
9. Mid-Western	185	407	558	622	642	723	807	876	15,077
10. Far-Western	84	187	256	297	313	336	396	414	15,461
11. South Eastern	396	825	1,031	1,205	1,314	1,445	1,633	1,799	10,623
Total	2,855	5,711	7,602	8,898	9,852	11,228	12,740	13,655	157,324

*These figures relate to the present time.

Table II.

Percentage represented by Accredited Milk of the total gallonage sold in each Region under the Milk Marketing Scheme, May-December, 1935.

Region.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
1. Northern	4	7	13	13	13	14	15	16
2. North Western ...	7	13	20	21	24	27	32	34
3. Eastern	17	25	29	32	34	38	39	40
4. East Midland ...	6	11	18	18	19	20	23	25
5. West Midland ...	3	7	15	15	16	19	21	22
6. North Wales ...	15	26	34	34	38	41	45	46
7. South Wales ...	1	4	10	10	10	10	12	13
8. Southern	6	11	18	18	18	24	24	25
9. Mid-Western ...	4	6	12	12	12	13	15	17
10. Far-Western ...	1	4	8	8	8	8	9	11
11. South Eastern ...	10	19	27	28	30	33	36	38

Smithfield Club has imposed a ban on the colouring of sheep. Their new rule is that "in order to facilitate judging and secure uniformity, all sheep at future shows shall be exhibited uncoloured and unoiled."

The *Jersey Evening Post* states that "Dry Toast," Mr. P. C. Mourant's famous 43-year-old white pony, has been destroyed, following a fracture of the leg. The faithful old animal will be remembered by the thousands who attended the annual gymkhanas held under the auspices of the R.J.A. and H.S. at Springfield.

Notes and News

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events

Mar. 30th.—N.V.M.A. Committee Meetings.

Mar. 31st.—**N.V.M.A. Council** and Committee Meetings.

April 1st.—R.C.V.S. Annual Fee due.
R.C.V.S. Committee Meetings.

April 2nd.—R.C.V.S. Committee Meetings.

April 2nd.—Victoria Veterinary Benevolent Fund Council Meeting.

April 2nd.—Meeting of the Central Division, N.V.M.A., at Conway Hall, Red Lion Square, W.C.1., 6.30 p.m.

April 3rd.—**R.C.V.S. Council** and Committee Meetings.

April 4th.—Annual General Meeting of the North of England Division, N.V.M.A., at Newcastle-on-Tyne, 11.30 a.m.

April 6th.—Meeting of the Editorial Committee, N.V.M.A., at 2, Verulam Buildings, Gray's Inn, W.C.1, 4 p.m.

May 7th.—Last day for nominations for election to R.C.V.S. Council.

May 21st.—Voting Papers issued, R.C.V.S. Council Election.

May 28th.—R.C.V.S. Council Election Voting Papers due.

June 4th.—R.C.V.S. Annual Meeting and Luncheon in Edinburgh.

June 11th.—D.V.S.M. Examination begins.

June 24th.—R.C.V.S. Committee Meetings.

June 25th.—R.C.V.S. Committee Meetings.

June 26th.—R.C.V.S. Committee and Council Meetings.

June 29th.—R.C.V.S. Membership Examinations begin.

Sept. 14th-18th.—N.V.M.A. Annual Congress, Scarborough.

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PERSONAL

Lady Hobday

Although a period of nearly four months has passed since Lady Hobday was knocked down by a motor car in Kensington, we have to state, with much regret and sympathy with Lady Hobday and Sir Frederick, that her condition still gives serious cause for anxiety. While the fractures of the arm and leg have now united satisfactorily, the progress of the head injury is not such as had been hoped for, and little headway has been made in combating the effects of the severe shock.

Captain A. W. N. Pillers

Since the announcement, made in our issue of February 29th, that Captain Pillers was making progress towards recovery from his heart attack on the 17th of that month, there has been a prolonged period of anxiety. We learn, with much regret, that this continues, though there has been some slight measure of improvement.

Presentation to Professor Share Jones

The presentation of a silver casket to Professor Share Jones was the feature of a successful dinner and dance held in connection with the Liverpool University School of Veterinary Science at Reece's Restaurant, Liverpool, on Tuesday, March 17th, 1936. Amongst those also present were Lord Howard de Walden, Pro-Vice-Chancellor Abell and Mrs. Abell, Professor Craig and other members of the staff.

Professor Share Jones, in calling upon Lord Howard de Walden to speak, said that His Lordship needed no word from the Chair in introducing him to that audience, for the name of Lord Howard de Walden was universally known as that of a great national patron of the Arts and of Science. It was particularly interesting to them that he was also a great patron of the horse, being a lover of the horse for the horse's sake. There was nothing inconsistent between this and art, for it would be difficult to find anything more beautiful in animal life than a well-trained, thoroughbred horse. Lord Howard de Walden, furthermore, was the greatest benefactor of their own Veterinary Hospital—it was through his generosity that the establishment of the first and only Veterinary Hospital in a British University became possible.

Lord Howard de Walden said that he came there that evening with the intention and desire to speak about Professor Share Jones and his work with which he was well acquainted and with parts of which he had had some intimate connection, and about the recognition that had been made of the Professor and his work by the University of Berne. But he felt he had to restrict his remarks because he now understood others would also deal with the personal subject.

Professor Share Jones had devoted his energies to the expansion of Veterinary Science and had been endeavouring to persuade this country to place a real interpretation upon it. There was no doubt about the high position occupied by Veterinary Science in some other countries, but he feared that Professor Share Jones's work in Britain placed him, the Professor, in the position of a voice crying in the wilderness. The unfortunate thing was that the wilderness was so enormous, and the result was that Veterinary Science had not expanded in Britain in the way it had abroad. This was due to the lack of support of such efforts as had been made by Professor Share Jones. In fact, so marked had been this neglect, that Veterinary Science in Britain could very correctly be termed the Cinderella of the Sciences. The lack of a real appreciation of Veterinary Science had been an enormous loss to the country and the Empire, for so far from being behind other countries, Britain, which had been so well endowed with live-stock and was the finest animal country in the world, taking such great pride in animals and showing such sympathy towards them, surely should be taking the lead.

After making some amusing references to the views held on Veterinary Science in some parts of the world which he had visited and possibilities of future extensions, Lord Howard remarked that he had been definitely associated with his friend, Professor Share Jones, in what was known as the Land Settlement Movement. In this connection he had observed how the Professor had been the means of demonstrating on many occasions the application of Veterinary Science to the development of the countryside and of placing on the science a wider interpretation and a closer association with the country's natural resources than was hitherto regarded as

being possible. Veterinary Science, and Animal Husbandry in its widest definition, had been brought into actual contact with rural industries. They were being utilised to revive and develop those industries connected with the domestic animal and to create new ones—industries which essentially belonged to the countryside. Professor Share Jones had been advocating this for many years and in many places. His efforts were now being translated into fact. What benefits such application could bring to the countryside as a whole it would be difficult to estimate. He was therefore very pleased to be present to associate himself with the action which was to be taken that night to show an appreciation of the original efforts of Professor Share Jones. Although it had thus been left to a Continental university to take the lead in paying tribute to the work of one of Britain's own men, he was none the less gratified to learn that it was their intention that evening to show their recognition of the Professor's work. He had great pleasure in proposing the toast of the University of Liverpool and its School of Veterinary Science.

Pro-Vice-Chancellor Abell, responding, paid a tribute to the loyalty of the staff of the Veterinary School, to the school itself and to the University. Speaking of the early days of the University, he said he was reminded of the work of Professor Hele Shaw, and what Hele Shaw as a pioneer was to the School of Engineering, Professor Share Jones had been to the School of Veterinary Science. Professor Abell said he was inclined to agree with the statement made by Lord Howard de Walden that Veterinary Science was the Cinderella of the Sciences, but there was no reason why this should be so. He believed there was a great future for the profession, and he instanced a number of openings where he considered the services of Veterinary Science could be utilised more fully.

Addressing himself to the students, he said that the degree in Veterinary Science would eventually become of considerable value to them as graduates, but he would remind them that the certificate awarded by the University was nothing more, in engineering parlance, than a bag of tools. It remained with them to make use of those tools to the best of their ability and so enhance their profession. The degree alone would not do that, and its value depended more upon the work of the graduates than upon those who trained them.

The gathering adjourned to the ballroom where Mr. Howel Hughes, Secretary to the Board of Veterinary Studies, announced the receipt of a large number of apologies for absence and letters of appreciation of Professor Share Jones's work, including communications from the Vice-Chancellor (Sir Hector Hetherington), the Bishop of Liverpool (Dr. David), and the Archbishop of Liverpool (Dr. Downey).

Mr. Arthur Howse, the Student President of the Liverpool University Veterinary Society, on behalf of past and present students of the school, handed to Professor Share Jones a silver casket and an address in appreciation of the honorary doctorate recently conferred upon the Professor by the University of Berne, on what (stated the address) was one of the greatest occasions in veterinary history on the Continent—the commemoration of 100 years' progress in university education.

Professor Share Jones, in reply, said his pleasure at receiving the honour was enhanced by the fact that it pleased past and present students.

EXTENSION OF WHOLE-TIME VETERINARY SERVICE IN SOMERSET

With the object of assisting in the production of graded milk in Somerset and to encourage milk producers to clear their herds of tuberculosis, Somerset Agricultural Committee, at a meeting at Taunton on March 18th, decided to recommend the County Council to adopt an extension of the county veterinary service.

It is recommended that the County Council should carry out all veterinary examinations of Grade A, accredited, and tuberculin-tested herds, payment by producers for this service being at reduced rates, and that general advice, including tuberculin testing, should be given to any producer desiring to rid his herd of tuberculosis. The scheme will involve the appointment of a whole-time assistant county veterinary officer and additional clerical staff.

An amendment that the appointment of the new official should be deleted from the scheme was defeated.

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LIVERPOOL EXAMINATION LIST

The following is the University of Liverpool, School of Veterinary Science, Examination List for March, 1936, in connection with the University Degree of B.V.Sc.:—

Second Examination.—Budden, L. J.; Kennedy, G. Y.

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R.C.V.S. OBITUARY

Elder, Alexander Gourlay, The Bredons, Battledown, Cheltenham. Graduated Edinburgh, May 21st, 1895. Died March 20th, 1936, aged 65 years.

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NATIONAL PONY SOCIETY

At the annual meeting of the National Pony Society, which was held at the Royal Agricultural Hall, Islington, on March 20th, the report of the council, which was considered highly satisfactory, was adopted, and the President, referring to the value of the native breeds of ponies, said that in future these breeds would be the first thought of by the society, which during the past year had done a good deal on their behalf. As an example of their commercial value, he mentioned that London's milk supply was delivered by mountain and moorland ponies.

Mr. F. H. Badge, who has completed 25 years as secretary of the society, was presented with a silver tea service as a mark of the society's appreciation of his work.

It was announced that Mr. Herbert Bright would be president for the ensuing year and that Mr. Roy B. Charlton had been nominated as president-elect for 1937.

The question of a new equestrian game for young riders was discussed, it being considered that it might be advantageous if they had the opportunity of playing some suitable games as a variation of hacking and riding.

Mr. F. H. Unwin, the president, said that although the matter was not one for a breed society, there could be no objection to some modified form of polo, with a soft ball, which would be the best education for the game of polo itself.

It was suggested that something in the form of mounted bat fives might prove suitable.

LEGAL NOTES

Anthrax: Danger of Spread through Ear Punching.—Disapproval and criticism of the practice of punching the ears of animals that had been passed at the mart for subsidy payment was expressed by Mr. W. M. M'Kay, county veterinary inspector for Banffshire, during the hearing of an action in Banff Sheriff Court, when a dairy farmer was found guilty of, and was admonished for, having had in his possession a bullock affected with anthrax and failing to give notice of that fact to the police with all possible speed.

The blood of the animal in question was full of anthrax germs, said Mr. M'Kay, and with several others it was sent to the slaughterhouse in Macduff in the same float, and the others had ample opportunity to get infected as blood was "spurting all over the place." The practice of punching the ears was, however, approved by the Ministry of Agriculture.

Mr. M'Kay added that he had spoken to the Ministry's inspector following upon the case.

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Cow's Condition causes "Unnecessary Suffering" in Transit.—Messrs. Robb Brothers, Flemington Farm, Hallside, Cambuslang, were fined £8 at Hamilton Sheriff Court, on being convicted on evidence of having on December 20th, 1935, between Flemington Farm and an auction mart at Lower Auchingramont Road, Hamilton, caused or suffered to be removed a cow, the condition of which was such as to cause it unnecessary suffering, contrary to the Transit of Animals Amendment Order, 1931.

Alexander Smith, a motor driver in the employment of the respondents, said that on the day in question he conveyed six cows in a float to an auction mart at Hamilton. At noon, he was interviewed by the Chief Constable of Hamilton, who asked if he (witness) had taken the cows to the mart. Witness then noticed that the cow in question appeared to be ill. He denied that the cow was in an emaciated condition when put on the float in the morning. In answer to the agent for the defence, witness stated that the cow had walked unaided into the float, and had seemed to be all right when it left the float.

Mr. William Watt, veterinary surgeon and inspector of the Ministry of Agriculture, said he saw the animal at the auction mart. It was in a very emaciated condition, was breathing very heavily, and was in apparent distress. Whenever it moved it started to cough. Witness formed the opinion that the animal was in an advanced stage of tuberculosis. He considered that it was in such a condition that it could not be moved that day without causing it unnecessary suffering. He was of opinion that the animal could not have developed that condition between the morning and the time he saw it.

Mr. William Harley, burgh veterinary surgeon, Hamilton, corroborated. He said he examined the carcase of the animal after it had been slaughtered, and found the animal had been suffering from advanced tuberculous emaciation.

For the defence, Mr. Walter Miller Jackson, veterinary surgeon, Hamilton, said he was asked by Mr. Robb to examine the cow, and found it was breathing somewhat quickly and salivating. He formed the opinion that the cow had been overfed, and that the excitement of the journey had led to her breathing heavily. The animal was a heavy milker, and because of this was lean.

George Robb, in the witness-box, said the cow was all right when put on the float to go to the mart. It had had a little extra meat that morning. If he had thought there was anything wrong with it he would have had it destroyed. When he saw it in the mart there was nothing amiss with the animal, except that it was breathing a little heavily owing to the extra feeding.

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Foot-and-Mouth Disease Order Offence.—An outbreak of foot-and-mouth disease at Marlfields Farm, Adlington, last year, as a result of which 84 cattle had to be destroyed, was recalled at the Macclesfield County Petty Sessions, when the tenant, Thomas Sigley, was fined £3 for failing to comply with a Foot-and-Mouth Disease Order on moving cattle on the infected premises between January 14th and February 7th this year.

Acting Sergeant Thomas said on February 11th he received information of the offence from Major Barr, an inspector of the Ministry of Agriculture. In consequence he visited the farm and found a number of cattle and sheep there. Later the same day he interviewed the defendant at the police station. The defendant, the officer added, said the sheep were lambing on his other farm and the lambs were dying for want of attention. "I had not studied the form left by Major Barr on January 17th, and did not know a licence was required from the Ministry," Sigley was alleged to have said.

Major Barr told the magistrates that Sigley made an application to the Ministry for permission to restock his farm. He visited the farm and gave permission for Sigley to restock up to 50 per cent. of the number of animals slaughtered. A notice was left with Sigley's wife, and that pointed out that any cattle obtained could not be accepted without a licence from the Ministry. "These restock animals have to be kept in isolation for 21 days and then the premises are finally freed," the inspector added.

Major Barr said when he visited the farm later he found 44 cattle and 23 sheep there and the sheep were actually on the infected land. These animals, he said, could have carried disease since cattle had been moved on the land without the Ministry's knowledge, but by good luck no cattle had been moved from the farm.

Mr. Sigley said he was away when Major Barr first called and when he came back he understood he could restock up to 50 per cent. He did not read the notice left by Major Barr and did not know a licence was required.

"I arranged for the cattle to come immediately I heard I could restock," he said. "Two extra were sent by mistake and I thought it would be better not to return them. The lambs were dying in the snow—I had lost 15 in the storm—so I decided to bring them home. I did not intend breaking the law."

Mr. Sigley, in reply to Superintendent Durnell, said the farm had been closed down as a result of foot-and-mouth disease, but sheep from two miles away had got on to his farm, and he considered if other people's animals could ramble on his farm he ought to be able to restock.

"It is more carelessness than anything else, but you may have done a great deal of harm," said the Chairman, announcing the magistrates' decision.

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Greyhound's Curly Tail.—A greyhound whose tail was alleged to curl more and more as it ran was the subject of an unusual action recently heard at Newcastle.

Mrs. Clara Gardiner Mitchell, of Winchill, Gloucestershire, who bought the dog, King's

Folly, from Mr. J. McKeown, of Newcastle, claimed repayment of the money alleging breach of warranty. She also alleged that Mr. McKeown had told her that, although the dog had a curly tail, this did not detract from its capabilities, as when in action the tail was fully stretched and the peculiarity was only noticeable when the dog was called to heel. In fact, said Dr. Charlesworth (for Mrs. Mitchell), the dog's tail did not uncurl when running, and as this peculiarity prevented it from turning the dog was useless.

Mrs. Mitchell, giving evidence, said that Mr. McKeown told her in a letter that the dog uncurled its tail when running, but her experience was that it never uncurled its tail while running or walking about. The faster the dog went the more its tail curled.

Mervyn James Hapgood, of Cirencester, a slipper, said, in evidence, that he slipped the dog last November. When slipped it followed the hare, but failed to turn it. This was because it could not turn: it tried, but was unable to do so because of its tail, which was curled right over its back like a clock spring. Its tail should have been stretched straight behind it, as the tail was the balancing part of a greyhound. The dog was of no use as a coursing greyhound. The only thing to do was to put it under the ground. It was no good as a pet. It would steal everything in the house. It was the nature of greyhounds to steal everything they could reach. Thirty years ago greyhounds had more curl in their tails and deeper chests. Now, when dogs were bred for speed, their chests were shallower and their tails straighter.

Peggy Thompson, of Carlisle, said, in evidence, that she had had charge of the dog and it straightened its tail when running.

Thomas Amos, head trainer of Gosforth Stadium, Newcastle, giving evidence, said that he had seen King's Folly galloping with its tail outstretched. Some greyhounds had curly tails, but were never really good dogs.

Addressing Judge Thesiger, Mr. J. Harvey Robson (for Mr. McKeown) said that Mr. McKeown's statement about the dog's tail was true, but was not a warranty and was not intended to form part of the contract, which was that Mrs. Mitchell was to buy an untried greyhound.

The Judge gave judgment for £40 and costs for Mrs. Mitchell. He said that he was quite satisfied that the dog had a tail which was never stretched in action. No one dealing in greyhounds would have bought it without the assurance that Mr. McKeown had given in the letter to Mrs. Mitchell, and without such warranty as that, he was quite certain that Mrs. Mitchell would not have bought it. If Mr. McKeown wanted his dog back he was entitled to its return, as his Honour took the view that the dog was valueless.

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NEURITIS?

"M.R.C.V.S." writes, under the above heading: "I would be gratified if any member would enlighten me on the following condition in the horse. The subject is a 13-year-old cart gelding in good condition. He is continually rubbing his nose against the manger and twitching his head when in the stable, while outdoors, particularly if it is raining, he is much worse—shaking and twitching his head and holding it to one side as if trying to shade it. If, however, a covering of any sort is fastened to the nose-band and allowed to hang over his muzzle and nostrils so as to protect them, he is then quite workable. I have also under observation a similar case in a mare, 12-years-old. Any suggestions will be welcome."

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ANIMAL MEDICINES AND THE POISONS RULES

We learn from a recent issue of *The Pharmaceutical Journal* that, in the course of his observations as the leader of the deputation appointed by the Council of the Pharmaceutical Society to interview the Home Secretary in regard to his modifications of the Poisons List and Rules, as drafted by the Poisons Board, the President of the Society (Mr. E. Saville Peck) said that the Council viewed with misgivings the extension of the recommendation of the Board so as to permit persons carrying on a business which comprised the manufacture of medicines for the treatment of animals to supply to the public animal medicines containing poisons without the necessity of their becoming either authorised or listed sellers of poisons. If the detailed provisions regulating the transactions of authorised sellers of poisons and of listed sellers of Part II poisons were compared with the freedom accorded to those manufacturers, the possibility of substantial abuse was at once seen. It appeared to be possible for a shopkeeper to carry on a business comprising the manufacture of medicines for the treatment of animals and to sell those medicines from a shop. The shopkeeper need not employ a pharmacist for the sale of substances in the First Schedule, nor was there any restriction of their sale to a "responsible deputy." He hoped it would be found possible to restore the Rule as provided by the Board's Report.

No specific mention of this aspect of the matter was made, in reply, by Mr. Geoffrey Lloyd, M.P., Parliamentary Under-Secretary of State for Home Affairs, and in its general editorial comment *The Journal* (of March 7th) states: "Our readers will be aware that the Poisons List and Rules, as confirmed by the Home Secretary, have been laid before each House of Parliament, and that during the past few weeks an Address could have been presented by either House, praying that the List and Rules be annulled. No such address has been presented, and although the exact date when the statutory period of thirty days expired is uncertain, it may be taken for granted that by the time this issue of *The Journal* is received by members the Rules will have statutory significance. The President, at Tuesday's meeting of Council, held out very little hope of any alterations being made in the Rules, and from Mr. Geoffrey Lloyd's reply to the Society's deputation it is evident that before the Home Secretary modified the recommendations of the Poisons Board he had considered very carefully their probable effects upon the interests of the general public. It is also evident that the Government intend to ensure that the provisions of the Act are properly enforced. However, it should not be assumed that these new Rules are unalterable. Any circumstances which may show that in practice a Rule is unworkable, that any of the provisions is not in the public interest, or that some revision is needed, can be brought to the notice of the Home Office, which, as stated by Mr. Lloyd, desires to maintain close contact with the Council in the administration of the Act."

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NARCOSIS IN MAN AND ANIMALS

A recent paper by Professor J. G. Wright to the Comparative Section of the Royal Society of Medicine (which will be reviewed at length in a

later issue of *The Veterinary Record*) is the subject of the following *Lancet* annotation:

Professor Wright showed what great advances the practice of anæsthetics has made of recent years in veterinary surgery. Even for minor operations anæsthesia is now usual, and is generally obtained by the combination of narcosis and local anæsthetics. Slow intravenous injection of nembutal is a highly satisfactory means of getting narcosis in both dogs and cats. For the horse the enormous amounts required, grs. 200 for example, render this drug impracticable economically. All animals have a natural fear of restraint, which at once puts them into a different category from the average normal human subject. Fear and struggling greatly increase the risks associated with inhalation anæsthesia, and it is in abolishing these that the intravenous use of narcotics has so well proved its value in animal surgery. The excitement sometimes witnessed in narcosis was, Professor Wright said, hard to explain. It shed some light, another speaker suggested, on the psychological causes attributed to the excitement often witnessed in human patients of a certain type after consciousness had been abolished and when it was supposed that the "subconscious" mind had assumed uncontrolled sway. Avertin, Professor Wright believes, is not nearly so satisfactory in veterinary as it is in human surgery. Dr. D. H. Belfrage, who gave a capital summary of the use of the non-volatile narcotics by anæsthetists practising among mankind, expressed a preference, on the whole, for avertin, but approved highly of nembutal for young children. Mr. Basil Hughes thought that by a combination of avertin and local anæsthetics he achieved results in abdominal surgery even better, so far as the post-operative state was concerned, than those claimed by Finsterer for splanchnic analgesia. Mr. Hughes related cases showing the possible danger of evipan, and claimed good results for the use *per rectum* of a mixture of magnesium sulphate, paraldehyde, ether, and gum acacia. Sir Frederick Hobday, while admitting the excellent work made possible by newer methods, thought that chloroform properly given still held a big place in veterinary surgery.

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TREATMENT OF SEPTIC CONDITIONS

Mr. J. F. D. Tutt, F.R.C.V.S., of Winchester, writes: "In the report of the last meeting of the Southern Counties Division, N.V.M.A., published in your issue of March 21st, on page 355, I am erroneously reported as having said, 'In any septic condition of the uterus I think you get the best results if you put the serum into the jugular.' I never mentioned the word serum, but in the course of comments which appear to have escaped the ears of the reporter, I stated that in septic conditions of the uterus I had excellent results from the intravenous injection of Neosalvarsan (Bayer) supplemented by injecting pure glycerine into the uterus; also adding that Neosalvarsan was most valuable in all septic conditions. I know of no serum in this connection, other than massive doses of scarlatina serum in cases of puerperal sepsis in the human female, when Neosalvarsan fails; but I have never used it in veterinary practice."

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SOME DETAILS OF THE SYSTEM OF HEALTH INSPECTION OF MEAT AND MEAT PRODUCTS DESTINED FOR EXPORT, IN THE GREAT ABATTOIRS OF SOUTH AMERICA

This paper, by M. T. Morgan, M.C., M.D., D P.H., represents the Fourteenth Benjamin Ward Richardson Lecture delivered on November 12th, 1935, at the Royal Sanitary Institute, and describes in detail the methods adopted for the *ante-* and *post-mortem* inspection of slaughter-animals in the Argentine, Uruguay and Brazil, as witnessed by the author (an official of the Ministry of Health) on a recent visit thereto.

A tribute is paid to the efficiency, not only of the meat firms, but of the inspection service. One notes particularly that such a service is in the capable hands of the Department of Agriculture and Fisheries and not that of Public Health, and is thus controlled by veterinary surgeons.

The cattle slaughtered are chiefly of well-known British breeds, in some cases crossed with native stock, and the meat is destined either for the British, European or home market—the bulk of the trade being for export purposes, as one would expect from a country having a small industrial population and vast tracts of grazing lands. We are told that cattle are sold "on the hoof" for an average price of about £12, but before such animals can be moved from the ranches to the "frigorificos" a certificate of health granted by the State veterinary officer must be obtained, otherwise the veterinary inspectorate at the factories will not accept the animals for export, and they will either have to be killed for home consumption or returned to the ranch. The transport arrangements also are under the supervision of a special branch of the veterinary inspectorate. A further *ante-mortem* inspection is carried out in the observation yard of the frigorifico, and the animals are under observation during rest prior to slaughter, a certificate being finally given by one of the factory veterinary surgeons permitting the animals to be slaughtered.

The slaughtering process is described, as well as the meat inspection system. The veterinary officer in charge of the frigorifico is a State servant, under the Department of Agriculture, and under him are a number of veterinary surgeons according to the size of the factory. Under their supervision are a corps of "assistants" or lay inspectors recruited from among the more intelligent members of the factory staff, and who in addition to a knowledge of the butcher's art, have undergone a six-months' course in elementary veterinary hygiene and pathology. These are all State officials. The routine inspection of the simplest kind is performed by "auxiliaries" provided from the staff by the factories, and paid by the factory owners, *but entirely under the orders of the State veterinary officers.*

The inspection of the glands of the carcase is made by the "lay assistants" beforementioned, this being merely an indication to the veterinary inspector that the carcase or part is not normal. These lay inspectors are not expected to arrive at a detailed diagnosis, that, and the subsequent condemnation of the meat, being left to the veterinary staff.

The author states that he was struck by the extraordinarily high standard of the inspection service, and he also paid a tribute to the efficiency of the factories, both in the slaughtering and in their methods of utilising by-products.

It is refreshing to learn from an official of the British Ministry of Health how efficient a system of meat inspection can be in the hands of a State Veterinary Department, and one wonders if his remarks will be taken to heart in his own department here in England, and how long we shall have to wait before a similar system is introduced to replace the present chaotic state of affairs which goes under the name of "meat inspection" in England and Wales.

D. J. A.

THE NUTRITION QUESTION

Writing in *The Lancet* of March 14th, Dr. Robert Hutchison states: "The subject of nutrition is at present much to the fore; it may, indeed, be regarded as the public health 'stunt' of the moment, though maternal mortality runs it close. Unfortunately, too, it is a subject which has got badly mixed up with politics with the consequence that much of the writing about it in the lay and even in the medical press is of a tendentious character. This is a pity, for nutrition and its relation to health is a more complicated matter than is often realised and there is no subject which more requires cool and clear thinking."

Concluding his remarks Dr. Hutchison writes: "I might summarise the purport of this paper in the statement that it is intended to be a protest: (1) against the pessimistic view, apparently so commonly held, that defective nutrition is widely prevalent in this country; and (2) against the undue optimism which believes that a great improvement in the public health can be brought about by altering the national diet."

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BRITISH MEDICAL FILMS

The British Film Institute was founded in October, 1933, as a result of the recommendations contained in the Report of the Commission on Educational and Cultural Films, *the Film in National Life*. One of the functions of the Institute is to co-ordinate and develop the uses of cinematography for educational and cultural purposes, and in order to carry out its activities effectively it has formed a number of panels, of which the Medical Panel is responsible for the Institute's work in respect of films that are of technical interest to medical practitioners and students.

Since the formation of the panel it has been engaged in collecting information of existing medical films in this country. It issued a questionnaire to all the Medical Schools and Universities in Great Britain and to all bodies interested in hygiene and public health, and we have received a copy of the catalogue recently issued by the panel. Full indices have been included for ease of reference, and particulars are given of name of author, width of film, silent or sound, length, suitability, name and address of owner.

We note that it is realised that there may be medical films in existence made by individuals or associations primarily for their own use which have not been brought to the notice of the Medical Panel of the Institute, and that the panel is anxious to secure full particulars of such films, as supplements will be issued from time to time. Inasmuch as it would seem that the only veterinary films of the existence of which the compilers of this catalogue are aware are two for which Sir Frederick Hobday has been responsible, it would appear that use might be made of the supplements mentioned to make the scientific world acquainted with the other veterinary material contained in the Royal Veterinary College and other film libraries.

The panel hopes that this catalogue will prove valuable to those who wish to make use of the films of medical interest, and that it will thus be a means of developing in this country a method of education which deserves far more attention than it appears so far to have received. Copies, price one shilling, may be obtained upon application to The British Film Institute, 4, Great Russell Street, London, W.C.1.

HUMAN TUBERCULOSIS OF BOVINE ORIGIN IN STAFFORDSHIRE

A recent publication by Dr. A. Stanley Griffith on the incidence in England and Scotland of human and bovine tubercle bacilli in tuberculous meningitis included six cases of this disease from Staffordshire. Of these six cases, three proved to be bovine, two human, and one an anomalous disgonic strain, which is still under investigation. The bovine ratio in this small series prompted a further and more extended inquiry so as to include all forms of human tuberculosis in this country and a report on this is published in the *British Medical Journal* of March 14th. The following summary by the authors (Drs. A. Stanley Griffith and J. Menton) is given:—

"We have determined the types of tubercle bacilli in 49 cases of non-pulmonary tuberculosis derived from the county of Stafford. All the cases (six in number) of cervical gland tuberculosis, five of twelve cases of tuberculous meningitis, and ten of 29 cases of bone and joint tuberculosis, yielded cultures of bovine tubercle bacilli. The remainder—namely, seven cases of tuberculous meningitis and 19 of bone and joint and two of renal tuberculosis—yielded cultures of human tubercle bacilli. These results show that in Staffordshire the percentage frequency of bovine infections in non-pulmonary tuberculosis is somewhat similar to that found in some parts of Scotland. In human pulmonary disease in Staffordshire, on the other hand, the incidence of bovine infections does not at all approach the high percentage of the Scottish figures. In North-East Scotland, comprising the three counties of Aberdeen, Banff, and Moray, the percentage of pulmonary bovine infections in a preliminary series (1935) was 17 as against rather less than five for the rest of Scotland, whereas for Staffordshire the percentage of bovine pulmonary infections revealed by this investigation was under 1. Although it is possible that some of the cases from which cultures of tubercle bacilli were not obtained may have been bovine infections, it is unlikely that there could have been so many as would raise the incidence of pulmonary bovine infections in Staffordshire to the level of the Scottish figures. The Staffordshire figures for bovine infections in human lung tuberculosis are more in consonance with the previous figures for England than with the Scottish figures."

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STALLIONS AND PULLING POWER

The *North British Agriculturist* states that the Horse and Mule Association of America have established a stallion pulling association, and add: "Perhaps there are those who, on their knowledge of the breed, may not be surprised to know that the winner was a Belgian colt which was paired with a gelding that formed one of the world's champion pulling team. The Belgian horse may lack something in both leg and foot, but he can pull. The pull in this case, exerted against the dynamometer, was equal to moving eight ploughs through corn belt loam for 14 in. furrows six inches deep. The Belgian colt in his test at the walk drew the one-horse waggon one mile in 15 minutes 45 seconds. Second place was taken by a Percheron colt and the third by a Belgian. An American writer raises the question why we should put up with unworked stallions unless it is due to the farmer's attitude that stallions are too good to work. The same writer maintains that the day is coming yet when performance will have a great deal to do with the stud fee to be charged.

It would be interesting to know what stallion owners generally have to say about such a suggestion. The idea, say, of all stallions having to give practical proof of their pulling power before being licensed for breeding purposes seems quite intriguing."

Correspondence

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

All correspondence must bear the name and address of the contributor for publication.

The Editor does not hold himself responsible for the opinions of his correspondents.

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THE NATIONAL VETERINARY BENEVOLENT AND MUTUAL DEFENCE SOCIETY

To the Editor of The Veterinary Record

Sir,—So little is heard of the splendid work so efficiently, and of necessity silently, done by the officers of the above Society that, as an old practitioner who has received relief both from personal anxiety and also financial loss, during the last 40 years through being a member, I would like to emphasise its claims—especially to the newly qualified who are engaging in general practice, and to urge upon them the necessity of making themselves eligible for its assistance.

The annual subscription for the National Veteripary Benevolent and Mutual Defence Society is so little, and the benefits so considerable that it is inconceivable that so few practitioners are members. Membership is a fine insurance, and should be one of the first considerations of all who have family responsibilities. How easily an unreasonable or dissatisfied client may involve one—even when there is little or no cause—in legal proceedings is known only to those who have had this experience, and from this risk no practising veterinary surgeon is absolutely safe.

F. W. Willett.

High Street,
Staines.
March 23rd, 1936.

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"UNORTHODOX TREATMENT OF COLIC"

To the Editor of The Veterinary Record

Sir,—In your issue of the 14th inst., Mrs. Kelly subtly flatters me as "very able," but, woman-like, tones down the flattery later by reproof, for sins of omission.

Mrs. Kelly quotes from Colonel Rainey's letter of the 29th ult., and suggests that it is possibly senility which has urged her to write to you, but, for the benefit of your readers who do not know the lady, I would entirely repudiate this suggestion.

It appears to me that Mrs. Kelly's grievance is that Mr. Barker's treatment of the reported case of colic was unorthodox. I am reminded of the lines in which the poet describes the militant Christianity of those rival cut-throat brigands of Macedonia, at the period of the Patriarchists and Exarchists, "who proved their doctrines orthodox, by apostolic blows and knocks," and, although Mrs. Kelly's blows are quite gentle and lady-like, they are clearly intended as an admonition to the parties named, though obviously given more in sorrow than in anger.

The published report of the case is brief, but, if I remember rightly, Mr. Barker had stuck like a limpet for about a week to such orthodox remedies as oils, arecoline, belladonna, etc.—a not unreasonable test of his loyalty to the old and accepted faiths; the absence of succour from the older gods is fair justification for a man becoming a proselyte, and embracing the newer creed of heterodoxy.

Had I ventured to criticise Mr. Barker's treatment, it would not have been with regard to the use of air as an enema, but to the total inadequacy of a bucketful of water for the desired end.

It would be interesting if Mrs. Kelly would give us more information on the subject of her objection to the pumping-in of air into the lower bowel, in such a case as described.

Yours faithfully,

A. B. Mattinson.

Friars House,
Bamber Bridge,
Preston.
March 22nd, 1936.

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"GRASS DISEASE"

To the Editor of The Veterinary Record

Sir,—I was interested in Mr. Barron's paper and discussion thereon in to-day's *Record*, especially what was said regarding "grass disease." I agree with Mr. Begg's remarks in general, but must deny that this disease is only to be found in the North of Scotland. Apparently "grass disease" has been creeping gradually south for several years; reports over several years of fairly heavy mortality from it have appeared in Northumberland, Westmorland and Durham—as probably practitioners in those counties can testify—but until May, of 1935, I had never seen a case in my district of Yorkshire. I had seen two or three cases in Scotland some years previous but had little experience of treatment of the condition. In the last week of May my assistant, Mr. J. P. Pickering, who had had a fair amount of experience of the disease in his father's practice in Northumberland, diagnosed "grass disease" in a big, good farm gelding. I saw the horse the following day and at first glance confirmed his opinion; it was a typical case. Within the following three weeks we had six cases, all widely apart, but all typical, and up to date not another case has occurred. All were good horses (this disease seems to pick out the best); five died and one recovered. This horse, after trailing about for months an absolute skeleton, has just got back to work. Treatment of this disease is almost useless. A few months ago in the local press, I read a speech made by a member at a Farmers' Union meeting in the North of England advising owners, as soon as they were certain a horse had grass disease, to shoot it immediately and save trouble and expense. Although my one recovery had a lot and various medicines the first month or so of his illness I give the credit of his recovery to green clover. He was turned into a ten-acre field up to his knees. The field was never cut and he stayed there until the late Autumn. He was given oats, bran, linseed cake, etc., but ate little or nothing of these.

It would be a great help to practitioners if someone would invent a new name for this disease. The term "grass disease" conveys an altogether wrong impression to the average farmer. The task of treating this disease is perhaps the most thankless one with which veterinary surgeons have to deal. When we are called early in the disease to a good horse that is running at the nose and the owner thinks has just got "a bit of cold," it is very hard to convince that man that his horse is likely to die; nevertheless,

you advise treatment, and give treatment knowing very well that at every subsequent visit that animal will be worse and worse; in fact, the more we try to explain, the deeper we get into the mire. Perhaps in no other disease does one see an animal become so terribly or so rapidly emaciated, and still keep a cheery countenance, a glossy skin, and continue to walk about.

With Mr. Pickering I made four *post-mortem* examinations. Rarely does one find a dead animal so empty of all food—all that could be found in two of them were small quantities of dirty fluid. All the internal organs had shrunk to the size of those of a four-months-old foal. The whole alimentary tract appeared wrong from the pharynx to the rectum. I agree with Mr. Begg that anyone with any experience will never mistake the disease. I have had assistants from the North who frequently diagnosed grass disease and at times I have been suspicious in certain cases, but a few days have served to decide the question in the negative.

Yours faithfully,
Wm. A. Campbell.

Boroughbridge,
Yorks.
March 21st, 1936.

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BIOCHEMICAL ASPECTS OF CANINE HYSTERIA TREATMENT

To the Editor of The Veterinary Record

Sir,—At the Annual General Meeting of the North Midland V.M.A., which was reported in *The Veterinary Record* of March 14th, views were expressed regarding the use of calcium in the treatment of canine hysteria. I fully agree with these views up to a point; that is, I feel quite sure that the cause of hysteria is to be found in the field of biochemistry, and that it is probably due to some abnormality of the inorganic salt content of the blood plasma. However, I think that those gentlemen who suggested calcium as a curative agent have picked upon the wrong salt. I would be more inclined to suggest that the condition is a hypomagnesaemia rather than a hypocalcaemia. We know that in all animals hypocalcaemia causes tetany leading to coma. In my experience there is never any sign of either tetany or coma in hysteria cases. We also know that hypomagnesaemia causes increased excitability of the whole of the nervous system, the magnesium ion being depressant. Hysteria seems to me to be definitely a condition of hyperexcitability. Both sensory and motor functions appear to be stimulated, as also are the spinal reflexes. Another difference between hypocalcaemia and hypomagnesaemia is that in the former the symptoms are continuous and in the latter they are spasmodic. This is probably because in the latter case the spasms are usually a result of some external stimulus.

Yours faithfully,
J. McGhee.

Clarence House,
Russell Street,
Gloucester.
March 15th, 1936.

Advertisers' Announcements

B.D.H. Vitamin Products

With the above title, British Drug Houses, Ltd., Graham Street, City Road, London, N.1., have issued a booklet in reference to vitamins—their chemical constitution, standardisation and clinical application; it contains also notes on the clinical use of the different B.D.H. preparations in which vitamins are made available for medicinal use. The publication contains a profusion of references to current medical literature bearing on the subject, and we submit that it constitutes a valuable treatise which cannot fail to be of service.

We feel sure that many readers of *The Veterinary Record* will be interested to know of this publication and that a copy will be sent post free to anyone who applies.

Hormone Therapy

The British Drug Houses Ltd., Graham Street, City Road, London, N.1., have issued a booklet in reference to Gonan, the gonadotropic hormone, and the hormones of the ovary, Oestroform, Oestroform 'B' and Progestin. Readers are referred particularly to the introductory chapter, which contains a brief outline of the rôle of the different hormones during the various stages of the menstrual cycle.

In view of the interest which centres around hormone therapy at the present time we feel sure that many veterinarians will welcome such a booklet as this, and will be glad to know that a free copy is available on application.

Diseases of Animals Acts

SUMMARY OF RETURNS

Period.	Anthrax.		Foot-and-Mouth Disease.		Parasitic§ Mange.		Sheep Scab.	Swine Fever.	
	Outbreaks confirmed.	Animals attacked.	Outbreaks confirmed.	Animals slaughtered as diseased or exposed to infection.	Outbreaks reported by the Local Authorities.	Animals attacked.	Outbreaks confirmed.	Outbreaks confirmed.	Swine slaughtered.
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Period 1st to 15th March, 1936	27	34	—	—	10	36	5	61	51
Corresponding period in									
1935	19	19	1	346	5	6	15	73	36
1934	16	16	—	—	5	7	19	72	52
1933	14	16	7	456	12	22	21	56	26
Total 1st January to 15th March, 1936	122	153	4	389	43	152	110	434	259
Corresponding period in									
1935	96	105	22	4,691	48	66	135	337	136
1934	101	101	—	—	59	99	264	363	209
1933	91	110	47	4,508	62	118	167	197	68

Note.—The figures for the current year are approximate only. § Excluding outbreaks in Army Horses.